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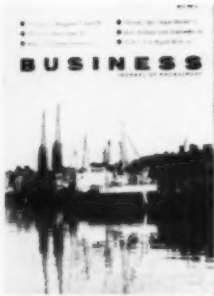
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COVER PICTURE

"The Lady Gwendolen"—one of the Guinness fleet of coasters which transport the brewery firm's products in bulk—at a Dublin quayside. Ektachrome by J. R. Cook

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ECONOMIC PROSPECT

Survey and Forecast of Business Conditions

Halting the spiral

▶ The Romans foretold the future by studying the entrails of dead beasts. We may forecast the economic future by looking back at Mr. Heathcoat-Amory's Budget. Here is the pattern that emerges.

▶ First, a halting of the wage-price spiral, helped by purchase tax cuts. These have two effects. They directly reduce retail prices, and they stimulate further price cuts.

▶ Businessmen have been criticized for not widely cutting retail prices when raw material prices have fallen. But many branded goods lose prestige if prices are cut merely to stimulate sales. At a time of purchase tax reduction this hardly applies.

Stimulus to investment

▶ Second, a moderate stimulus to industrial investment. Factory approvals are now less than half the level of two years ago, when the boom was in full spate. This would suggest a low level of industrial investment in the latter half of next year.

▶ Hence the increased initial allowances and the uniform rate for profits tax, which happens also to reduce the average tax burden.

▶ But the Government is not greatly worried about the level of investment spending next year, because it is Election Year, and they are planning to raise consumer spending.

Plan for spending boom

▶ There will almost certainly be cuts in income tax rates in the Budget next Spring. These will be felt in the pay packet during the summer.

▶ The London-Birmingham Motorway will be opened, to a loud fanfare, in the autumn of next year, and followed by the General Election.

▶ Businessmen would do well to plan now for the increase in consumer spending next year. Meanwhile spending—and prices—will remain fairly level, with a slightly rising trend of output.



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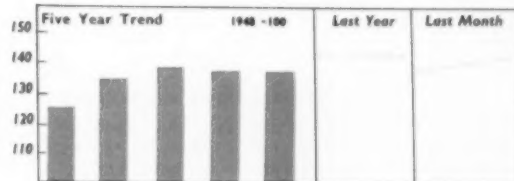
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STATE OF THE NATION

- Five key indicators to the State of the Nation, followed by 18 indicators to the main economic influences.

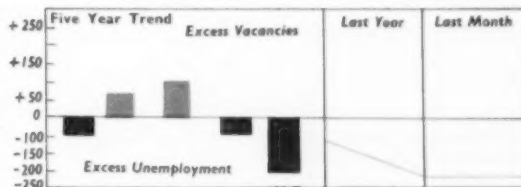
INDUSTRIAL PRODUCTION ▶

Industrial production has been jogging along barely level with a year ago. In February the provisional index, uncorrected for seasonal factors, was 141.2, showing a seasonal rise on 136 for January and similar to the figure of 142 in February last year. But four years ago the index was 130.



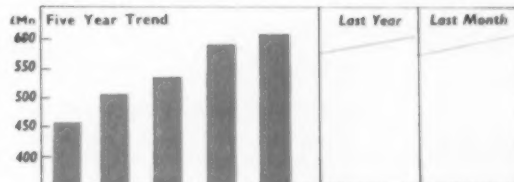
EMPLOYMENT POSITION ▶

Employment position is not getting worse. The total of unemployed rose by 8,000 in March to 433,000, but at the same time the total of unfilled vacancies rose by 8,000 to 217,000. Thus there are more people changing jobs but not more chronically unemployed. Excess of unemployed over unfilled vacancies has risen from 113,000 to 216,000 in the last year. Four years ago there were 99,000 more vacancies than unemployed.



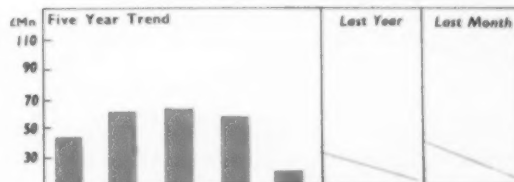
MONEY FLOW ▶

Business money flow, as indicated by cheque clearings, is not abnormally high. Total average daily clearings in March were £603 million, a rise on the £589 million of February and also greater than the £573 million of a year ago. Four years ago the total was £462 million.



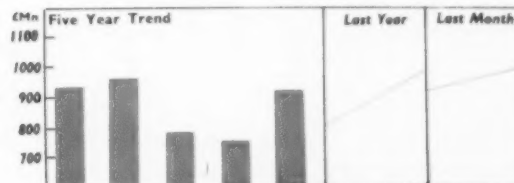
TRADE GAP ▶

Gap between imports and exports is at a comfortably low point. March excess of imports over exports was £26.6 million—£15.7 million above February but £21.8 million less than a year earlier and £13.9 million less than four years earlier. (Chart depicts the February position.)



GOLD AND DOLLAR RESERVES ▶

Gold and dollar reserves have been rising steadily. March total was £988 million, a rise of £81 million on February, a rise of £99 million on a year ago, and altogether £328 million higher than the low point of last September's crisis. Four years ago the level of the reserves was £959 million.



● **KEY TO THE CHARTS.** Bar charts show the 'Five Year Trend,' taking for each year the average monthly value during the most recent three months. Graph lines for 'The Last Year' compare the most recent month with the same month a year ago. Graph lines for 'Last Month' compare the most recent month with the previous month.

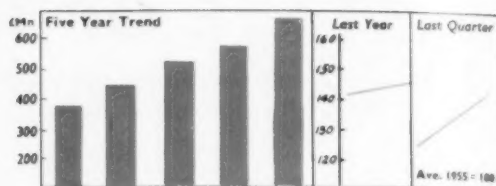
● **READERS' ENQUIRIES.** Spot enquiries by letter or telephone, involving no research, are answered free. More detailed enquiries will be charged for at cost, on the basis of professional staff time absorbed. This applies to both general management and economic enquiries.

MAIN ECONOMIC INFLUENCES on the STATE OF THE NATION

1. Trends in CAPITAL SPENDING

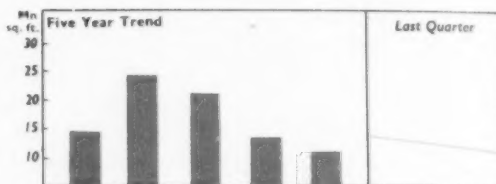
INDUSTRIAL INVESTMENT PLANS ▶

Industrial investment is at a high level, but unlikely to go higher in the near future. There may be a slight decline. In the fourth quarter of last year there was a slight decline, compared with the level a year earlier—according to revised Board of Trade estimates received since the chart was compiled. Rate of investment nearly doubled between 1953 and 1957, but the boom has now ended.



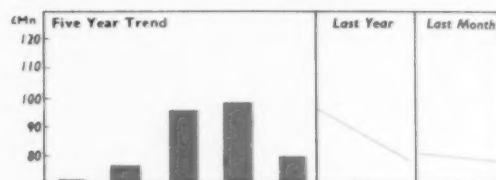
FACTORY BUILDING APPROVALS ▶

There has been a further decline in the volume of approvals, indicating a lower level of factory building about a year hence. In the first quarter of 1958, total area approved was 11.8 million sq. ft., a decline on the 13.7 million sq. ft. approved a year earlier and less than half the 24.0 million approved two years earlier, but above the level of 8.1 million approved four year ago.



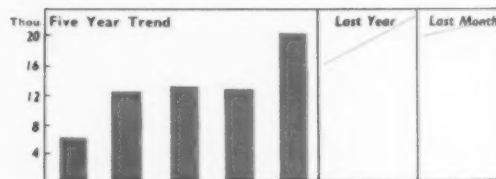
MACHINE TOOL ORDERS ▶

Machine tool orders in hand now represent less than nine months' work. The latest available figure is for January. This shows £75.3 million orders outstanding—£3.4 million less than a month earlier and £21.7 million less than a year earlier.



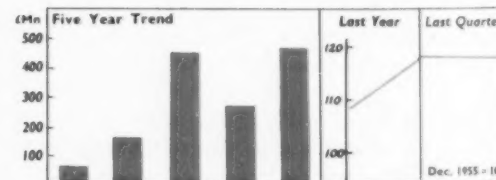
INDUSTRIAL HIRE PURCHASE ▶

Industrial hire purchase has recently been at a high level, though seasonally fluctuating. The B. of T. index for February for industrial and building plant and equipment was 99, against 106 in January and 100 last July. March H.P. sales of new cars and commercial vehicles totalled 23,300, a rise of 4,100 on February, an increase of 6,600 on March last year and a rise of 13,100 on four years ago.



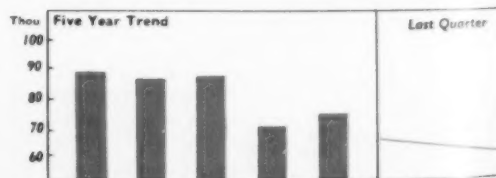
MATERIAL STOCKS ▶

Manufacturers' stocks have remained at a fairly steady level. B. of T. index for the fourth quarter of 1957 was 118.1, or 0.4 lower than the previous quarter but 8.2 higher than a year earlier. Non-manufacturing stocks declined slightly in the fourth quarter. The nation's stocks as a whole rose last year in value by £457 million.



HOME BUILDING STARTS ▶

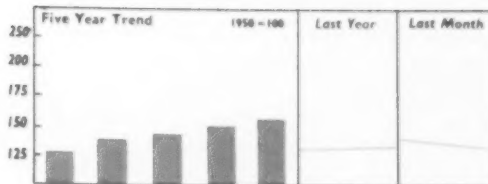
Home building starts, although seasonally rising, are on the decline, when account is taken of seasonal influences. The latest available figure, for the last quarter of 1957, was 61,686—12,413 less than the third quarter, 4,705 less than a year earlier, and 20,943 less than four years earlier.



2. Trends in CONSUMER SPENDING

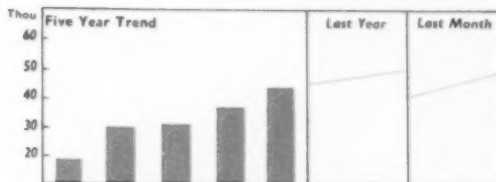
RETAIL SALES ▶

Retail sales are at a high and steadily rising level. Board of Trade index for February was 140, a seasonal fall on 146 of January but a rise on 137 of a year earlier and 115 four years earlier.



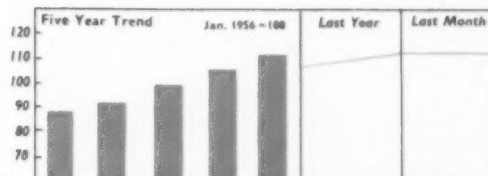
DOMESTIC HIRE PURCHASE ▶

Domestic hire purchase has lately been at a high level, particularly for used cars, the figures for which are shown on the accompanying chart. In March the H.P. sales of used cars totalled 51,900, a rise on the 42,100 of February and on the 45,600 of a year earlier. B. of T. index for household goods sold on H.P. was 98 in February, compared with 101 in January and 100 last July.



WAGE RATES ▶

Wage rates have been fairly steady, but are likely to rise slightly in the near future. February index was 112, for the fifth successive month, but was 5 points above a year earlier and 23 points above four years earlier.



PERSONAL EXPENDITURE ▶

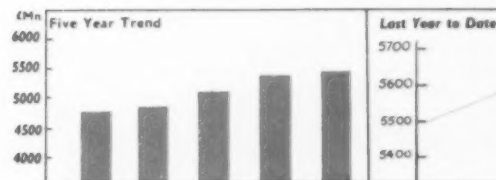
Personal expenditure has been rising steadily but not alarmingly, in view of past price increases. Fourth quarter of 1957 total was £3,778 million, which compares with £3,606 million a year earlier and £2,968 million four years earlier.



3. Trends in PUBLIC SPENDING

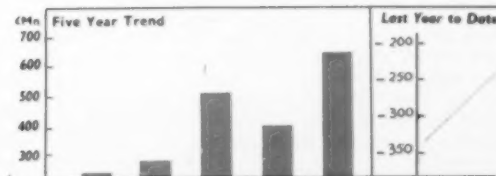
PAYMENTS FROM EXCHEQUER ▶

Payments from the Exchequer for the financial year just ended totalled £4,920 million, only a very modest increase on the figure of £4,868 million in the previous year. Chart shows that between the calendar years 1953 and 1957 expenditure rose from £4,800 million to £5,500 million, when the national insurance fund payments are included.



EXCHEQUER DEFICIT ▶

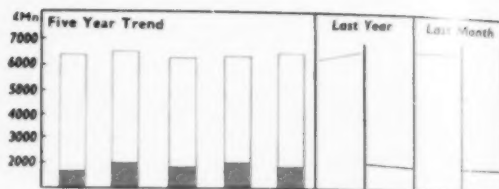
In the financial year just ended the overall deficit was £212 million, compared with £331 million the previous year. Bar charts show the surpluses on current account for the last five calendar years.



4. Trends in CREDIT POLICY

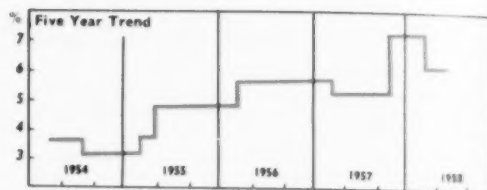
BANK DEPOSITS AND ADVANCES ▶

In March, bank deposits fell slightly but advances rose slightly. March deposits were £6,365 million, a decline of £35 million on February but a rise of £204 million on a year earlier. March advances were £1,917 million, a rise of £37 million on February but a fall of £59 million on a year earlier.



BANK RATE ▶

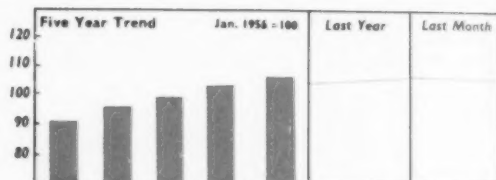
Bank rate may be further reduced. It was cut to 6 per cent on March 20, after having been raised from 5 per cent to 7 per cent last September 19. Chart shows the recent history of rises and falls.



5. Trends in MARKET PRICES

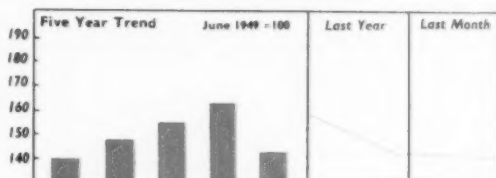
RETAIL PRICES ▶

Retail prices remain steady, and are likely to continue so. March index was 108.4, a rise of 0.8 points on February but only 0.2 points above last December. Changing prices of perishable foods can cause decimal point changes in the index when other prices are steady. In March last year the index was 104.1 and in the same month of 1954 it was 92.2.



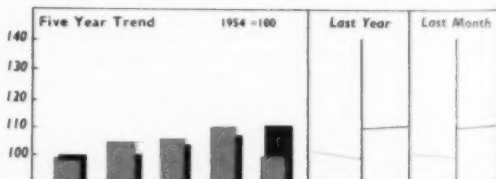
RAW MATERIAL PRICES ▶

Raw material prices have now fallen steadily since last April. March index was 139.3—or 1.0 below February and 20.1 below a year earlier, but only 2.5 below four years earlier. There may be a recovery later this year, but it certainly does not seem imminent.



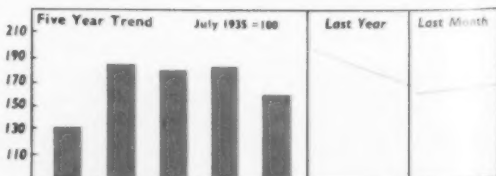
TERMS OF TRADE ▶

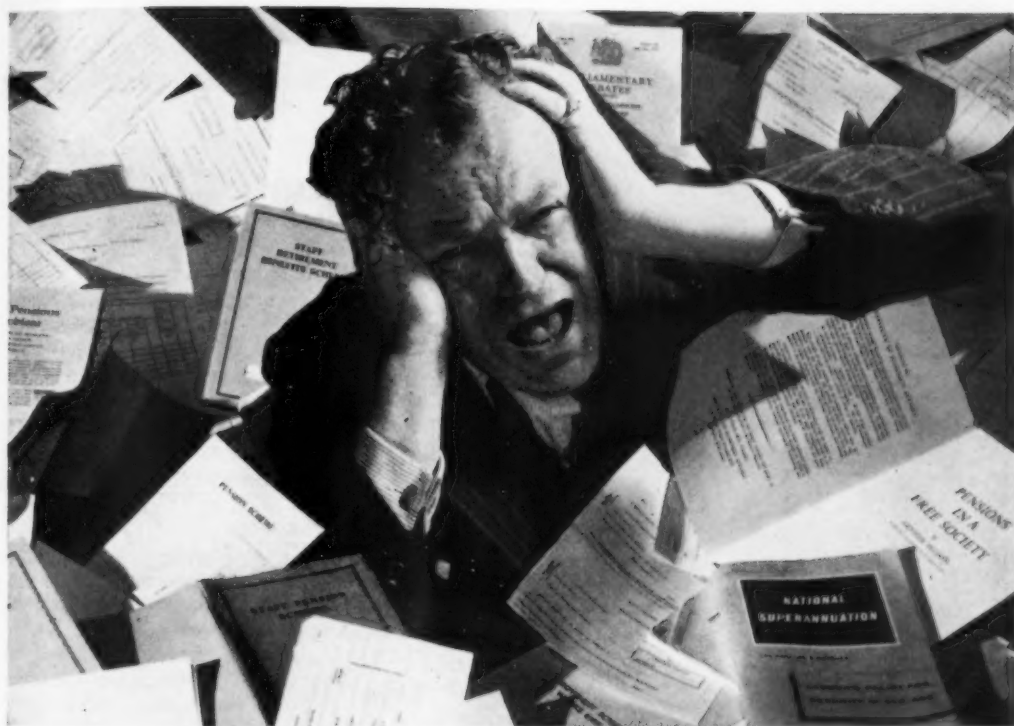
Terms of trade have recently moved more in our favour. February import price index was 99—1 point below January, but 2 points below a year earlier and 11 points above four years earlier. February export price index rose 1 point on January to 111—1 point above a year earlier, and 11 points above four years earlier.



SHARE PRICES ▶

Share prices have recently been in a state of fair uncertainty, due to the industrial unrest and economic recession. At the time of going to press, the Financial Times index of industrial ordinary shares is around 171—or 10 points above the March average but 16 points below a year earlier and 9 points below four years earlier.





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HOME MARKET SURVEY

A Round Britain Survey: Regional Notes on Markets and Industrial Developments

NORTHERN

DESPITE the talk of recession, the level of activity in the region remains fairly high, especially in **steel and chemicals**. It is felt that firms manufacturing capital goods have, however, been more affected by the high Bank Rate than those manufacturing consumer goods. Many firms are running down their stocks rather than buy at the present stage, whilst it appears that inability to quote fixed prices for the next 12 months is putting some firms at a disadvantage in the export market. This may explain why more firms are asking the Board of Trade for guidance in increasing their exports.

Short-time working and, in a few instances, the closing down of plant have been announced by a number of firms in the region. Those chiefly affected are manufacturers of building materials, components for railway rolling stock, textiles, and hand-milled sheet.

Declining trade at the port of Sunderland is troubling the River Wear Commissioners. During 1957, coal shipments fell by 11 per cent, imports by 14 per cent, and gross revenue by 12 per cent.



The outlook on the Tees, however, is more optimistic. At the Tees-port oil jetties last year, deliveries reached 867,779 tons, compared with 258,901 tons in 1956. Capital outlay on the new jetties is now starting to show a good return.

In the year ending September 1957, the Shotton Works of John Summers and Sons exceeded for the first time the target originally set for their development plan—1 million tons of steel per annum—with an output of 1,046,000 tons. The stage designed to bring production up to 1,650,000 tons is not now expected to be in operation until late 1959.

Meanwhile further expansion, already agreed with Stewarts and Lloyds and costing £3½ million, is being planned to **increase steel production** by an additional 250,000 tons.

South Durham Iron and Steel Co. are spending about £4 million on **rolling mill equipment** for their programme to expand plate production to 1,000 tons per eight-hour shift. The plant will be built on a new 530-acre site at West Hartlepool. Production of plate will begin in 1960 and by 1962 is expected to reach 1 million tons per annum.

A £12 million second phase will boost iron and steel production still further, with the B.T.C. increasing berthage facilities at Hartlepool Docks to accommodate large ore-carriers. Later extensions, made over a period of years, are expected to bring the cost to over £50 million.

Dorman Long's £60 million post-war development scheme has just been rounded off with the completion of their £18 million plant at Middlesbrough. The combined universal beam and heavy section mill is the most advanced of its type and the first in the U.K. It is expected to give increases in efficiency of up to 10 per cent over the present British Standard Beams in use by structural engineers in this country.

The Workington Iron and Steel Company announce that they are to build a completely **new sinter plant** and stockyard for fine ores at Workington. It will replace existing plant and take 2½ years to build, at a cost of £2½ million.

The Tractor Company have announced a five-year modernization and development plan for their works at Britley. The programme envisages 400,000 sq. ft. of manufacturing space, as well as new office blocks and warehousing, extending over an 18-acre site. The production flow of scrapers, bulldozers and other earth-moving equipment will not be interrupted.

Parsons of Newcastle and Reyrolle of Hebburn-on-Tyne—both members of the Nuclear Power Plant Co. Ltd.—have joined forces with an American concern for the manufacture in this country of nuclear-grade graphite. The result is a £6 million factory, now nearing completion at Newburn-on-Tyne, which will manufacture graphite blocks for atomic reactors at home and overseas.

English Electric and Yarrow and Co. Ltd. are building two 275,000 kilowatt generating sets and two 275,000 kilowatt boilers—at a total cost of £5½ million—for a projected power station at Blyth, Northumberland.

Production of Westair climatizers is now being concentrated and expanded in a separate factory away from the main Westool works at St. Helens, Auckland, County Durham.

The Editor regrets that the bar chart of Regional Retail Trade Indices has had to be abandoned, as the Board of Trade no longer compiles the index figures.



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that is not wise
for himself"*

(Italian Proverb)

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Head Wrightson have begun construction of a new heavy fabricating shop at Thornaby.

British Titan Products are starting to build new premises at Eastside, Billingham, County Durham. Approximate cost will be £100,000.

Export production of I.C.I. plasticizer alcohols is to be boosted by the construction at Billingham of a third carbonylation plant, capable of producing 20,000 tons of alcohol a year.

Over £1 million is already being spent at Billingham as part of a general expansion scheme for Perspex and Diakon acrylic compounds which should be completed in two years. There will then be capacity for 5,000 tons a year of Perspex made in large sheets which will be handled by special new equipment. A completely new Diakon plant will produce 2,000 to 4,000 tons a year, compounding by modern extrusion methods instead of pigmenting by the traditional methods of rolling on open-heated rolls.

Another I.C.I. project is for a Terylene plant at Wilton, costing about £20 million. Extensions which are already under way at the existing works should raise capacity to 30 million lb. by the end of this year. The latest plan will bring a further 20 million lb., making a total annual output of 50 million lb.

Thomas De La Rue and Co. (Plastics Division) are to undertake a £1 million extension at their Tynemouth factory during the next four or five years.

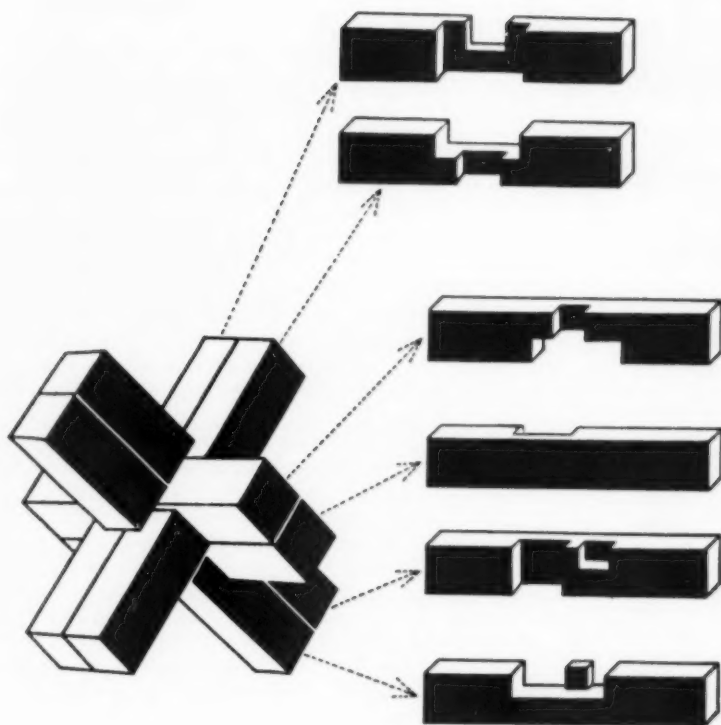
£400,000 has now gone on improvements and extensions to the Jarrow installation of Shell-Mex and BP. Although it is already one of the largest oil-distributing centres on the North-East Coast, the next two years will see this sum more than doubled on an extension of storage facilities on land adjacent to the present depot.

The rising demand for petroleum products on and around Teeside has made necessary the construction of another three storage tanks (costing £142,000) at the new £1 million Shell-Mex and BP oil installation at Teesport. Capacity will be increased from 34 to 40 million gallons when work is completed in about six months' time.

The Northern Gas Board is spending £125,000 on an underground storage cavity at Billingham. It will be capable of holding 10 million cu. ft. of gas—4 million cu. ft. more than the largest conventional gasholder in the region—when it is completed round about November this year. A conventional holder of similar capacity would cost about £500,000 to build.

British Chrome and Chemicals at Eaglecliffe, near Stockton-on-Tees, are installing a new contact plant for sulphuric acid. It will have a daily output of 100 tons of acid at strengths of 95 and 70 per cent.

C. A. Parsons and Co., Newcastle, are to build new laboratories costing over £1 million for research and development in the nuclear field.



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ECONOMIC PROSPECT

Hawthorn Leslie have announced a £1 million expansion programme for their shipbuilding and repair yards at Hebburn-on-Tyne. The improved facilities are for the construction of far larger ships by new methods involving partial welded pre-fabrication. The firm believe that, together with subsequent rearrangement of some building berths and further cranes, they will be better able to meet growing foreign competition.

Smith's Dock Company are going ahead with a £425,000 programme of extensions and improvements to the fitting and other shops at both North Shields and South Bank.

Clelands Shipbuilding Company, formed by Clelands (Successors), are to build a new shipyard on the Tyne at Willington Quay.

T. W. Greenwell and Co., Sunderland ship-repairers, have begun work on an 850ft. deep-water berth and quay capable of taking two super-tankers. It is planned to cut a 200ft. entrance into the old North Dock and to dredge a channel of the same width along the 850ft. length. The quay, which could be extended to 950ft. if necessary, will be equipped with the latest appliances for repairing oil tankers and with plant for discharging oily ballast water.

Joseph L. Thompson and Sons, already engaged on the largest ship yet built on the River Wear—a 34,500-ton oil tanker—are also to build a 38,000-ton tanker for P. & O. Because of the current trend towards the design of larger vessels the firm intend to build a berth capable of taking tankers up to 65,000 tons deadweight.

Tynemouth Corporation are forwarding a scheme for pumping water from the River Coquet into a storage reservoir. Total cost is estimated to be £2½ million.

Work is expected to start soon on the Gateshead-Felling By-pass, estimated to cost more than £1½ million. Starting at the southern approaches of the Tyne Bridge, and running in a south-easterly direction for nearly three miles, the new road will join the Newcastle-Sunderland trunk road at Heworth.

A 2½-year, £470,000 scheme for the improvement of the Glasgow-Carlisle trunk road has been announced by the Secretary of State.

Durham County Council is to spend £138,000 on strengthening and widening Blackwell Bridge, which spans the River Tees between Durham and the North Riding.

It is hoped that the Ministry of Transport will soon authorize the road tunnel under the Tyne, having agreed to it in principle. Construction should take five years and cost nearly £13 million. When finished, the mile-long tunnel will be situated near the present Jarrow-Howden ferry, and link up by approach roads with the coast road from Newcastle on the north side of the river and with the Gateshead-Sunderland road on the south side.

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EXPORT MARKET SURVEY

A Round-the-World Survey: Country by Country

MEXICO

MEXICO'S 760,000 square miles make her the third largest country in Latin America (and nearly nine times the size of Great Britain). Her population is about 31 million, and its annual rate of increase—3 per cent—is one of the highest in the world. Despite this, her national income is increasing at the rate of nearly 6 per cent per annum, and her gross national product at the near world record of 10 per cent, having risen from £194 million in 1939 to £2,303 million in 1955.

A growing feeling of nationhood together with pressure of population combine to produce a policy of industrial diversification and agricultural expansion aimed at achieving economic independence for the country. Last year Mexico imported £400 million of goods, mostly from the U.S.A. Britain's contribution to this figure was only £10 million, but Mexico, like Canada, would like to see this country's share in her markets increased. And there is ample scope for this in the sale of capital equipment and in the setting up of joint enterprises to manufacture both capital and consumer goods over there.

More than 60 per cent of Mexico's working population is engaged in **agriculture**, livestock raising, forestry, hunting and fishing. Although they produce less than 21 per cent of the national income, these activities produced over 50 per cent of Mexico's exports in 1955.



Low agricultural productivity is due chiefly to lack of water, soil exhaustion, poor technique, soil erosion and low capital investment. The situation is being countered by large irrigation projects, increased crop rotation, the use of more fertilizers, insecticides, improved seeds and breeds, energetic re-afforestation and Government aid both through direct investment in agriculture and encouragement of more private investment. The improvement of communications is doing much to remedy the bad marketing arrangements for food crops, whilst storage facilities have now started to make their appearance.

The annual value of investment in agriculture is now more than ten times what it was in 1940. This year's budget allocates £28.6 million to development of the

land, £21.2 million of this being earmarked for irrigation.

Industry in Mexico is founded on a broad base of extensive natural resources, plentiful cheap labour, supplies of locally produced steel and increasing electric power. The would-be investor should note that the Government encourages development by tax exemptions or reductions for manufacturing industries not producing substitutes for existing goods, non-metallic mineral extraction, assembling industries, service industries in important economic activities, and industries exporting finished or semi-finished products that have been largely processed in the country.



Realizing that industrial expansion is impossible without adequate power, the Government is pushing ahead as fast as it can with its plans for installing further **generating capacity**. The general plan is to reach an installed capacity of over 3 million kW and an annual generation of over 11,000 million kWh by 1963. About half the new generating plant will be thermo-electric and half hydro-electric. Total expenditure on generation, transmission and distribution of electricity from 1955 to 1963 should be in the region of £178 million, of which about 50 per cent would be spent on imported materials and equipment.

During this year work will be completed on several plants generating a total of 112.6 MW, and will continue on others, which by 1959 and 1960 will produce a further 473 and 338 MW respectively. More than one-third of the installed capacity is in the Federal District and the states of Mexico and Puebla, and just less than half the total hydro-electric power is generated in the last two states.

The probable total of Mexico's **iron reserves** is 522 million tons. The largest single deposit is in the Cerro del Monte in the state of Durango, comprising about one-tenth of the country's estimated total reserves. Almost as important is the deposit in Michoacan.

From 1940 to 1954 production of pig-iron rose from 92,140 to 381,133 tons annually. Over the same period steel ingot capacity rose from 143,435 to around 900,000 tons annually. It seems unlikely, however, in spite of the expansion programmes which are in hand, that the

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ECONOMIC PROSPECT

industry will be able to make up the difference between steel production and consumption, especially in flat products. This should mean good prospects for some time for foreign exporters of steel, particularly special steels.

The chief problem of Mexico's nationalized oil industry is lack of capital, with the result that most of its refineries are antiquated. An estimated £21.5 million is needed to enable existing refineries to be modernized.

Crude oil production rose from 72.2 million in 1950 to a peak of 89.4 million barrels in 1955. Last year the rate of production fell to 61.5 million barrels for the first nine months. An increase is, however, expected when the pipe-line from the Angostura field (discovered in 1954) to the port of Veracruz is completed soon, bringing in an extra 25,000 barrels a day.

Although Poza Rica remains the mainstay of the Mexican oil industry with its 99,643 barrels a day, the development of new resources has reduced its share of total output to 41 per cent. At the same time the capacity of the refineries at Atzacapotzalco and Minatitlan has been doubled to 100,000 and 50,000 barrels a day respectively, whilst improvements are under way at Ciudad Madero and Salamanca refineries. Along with this development the capacity of the Minatitlan-Salina Cruz pipe-line is being increased to 30,000 barrels a day, and a 306-mile long products line capable of carrying 25,000 barrels a day is being taken from Tampico to the industrial centre of Monterrey.

The cement industry has made the most spectacular progress of all in Mexico. At the start of the century none was being made; in 1929 production was a mere 225,000 tons; by 1940 it had grown to 485,000 tons; by 1954, to 1,783,000 tons; and in 1955 it exceeded 2 million tons. Production is chiefly of Portland grey cement, more than three-quarters of it going to the construction industry. The balance is used in the manufacture of tiles, tubes, lamp posts, asbestos-cement wares, piles, drainage pipes, water tanks, mosaics and other products. Inadequate sea transport has so far frustrated attempts to export.

The government is spending £68.3 million this year on transport and communications. Of this sum £16.7 million are for construction of new main roads and the continuation and termination of Federal road works already started, £1.1 million are for bridges, £5.1 million for maintenance of the existing network of 9,100 miles, and £1.2 million for secondary roads.

Although the total expenditure scheduled for maritime projects over this year and next is relatively small compared to the others, it should help to bring about Mexico's emergence as a shipping nation by completing the development of a number of ports, harbours, quays and warehouses, and enlarging her merchant and fishing fleets.

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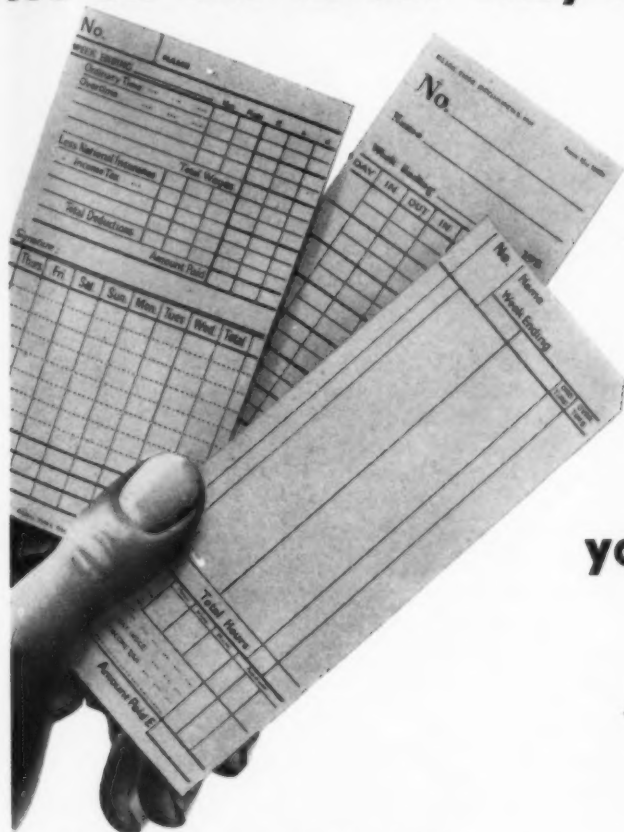
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BUSINESS

MARCH OF BUSINESS

The risks and lessons of automation

LAST year Vauxhall Motors made a net loss of £1,134,744, compared with a profit of £3,934,443 in 1956, yet sales rose from £71.2 million in 1956 to a record level of £76 million in 1957.

This indicates one of the risks of automation. The company have completed a £33 million plan to expand and largely automate their production so that 250,000 cars and trucks a year can be turned out. But although sales are a record—and there is confidence that before long they will be much higher—the company have reached a phase when capacity is suddenly far above demand. Not 60 per cent of it is currently being used, but overhead costs for the lot must nevertheless be met.

Thus, after all the public discussion of possible labour troubles arising from automation, we have here a case of a company who have managed their labour relations very well. But the financial problems of automation have not been so easy.

How will the company speed up their escape from this difficulty? Oddly enough, when automation is introduced and the need for work study of individual effort would seem to have lessened, it is largely by work study that the company hope to improve their position.

When a new production or assembly line is laid down, there can be no certainty, in advance, that the right number of employees are being allocated to each task. But during the coming months Vauxhall employees (who are paid a high, but fixed time wage without bonus) will be co-operating in work study to ensure

that each man is doing "a fair day's work for a fair day's pay". In many cases, as they become more skilled at their new tasks, it may be possible to increase output substantially without taking on extra labour.

Thus unit costs will come down, and there will be scope for price cuts, sales promotion expenditure, etc., which will enable the company to enjoy a bigger market, more in keeping with their new capacity.

How dividend per cent figures mislead

THE need for legislation to permit the issue of no par value shares is underlined by figures published recently by the London Stock Exchange in their brochure "Interest and Dividends upon Securities Quoted on the Stock Exchange, London 1957".

Market value of industry's ordinary capital is shown to have risen from £6,657 million in 1947 to £10,880 million in 1957—a rise of 63 per cent. This is hardly surprising during a period when retail prices alone rose by 62 per cent and industrial produc-

tion by 54 per cent. If production had not gone up at all, it might have been expected that the value of industry's capital would have kept pace with prices.

During this ten-year period there have, of course, been bonus issues of shares by companies endeavouring to keep the market value of shares, and the value of assets behind them, not too far out of line with nominal values. Nevertheless, in 1947 ordinary share market values were 284 per cent of nominal, and in 1957 they were actually higher, at 287 per cent. So in order to pay an average rate of dividend of only 5.67 per cent on market values, companies had to declare an average rate of nominal dividend of 16½ per cent on nominal.

Such figures are completely misleading to most employees, and quite capable of deliberate misrepresentation.

Mr. Punch helps the private secretary

THE Office Management Association's first course for private secretaries (BUSINESS, April, page 22)

Next Month

New Look at Incentives

Do they really work? Is there an alternative?
An expert panel examines these questions

First Steps with a Computer

Case-history of a firm's experience of installing and working a low-priced machine

achieved at least one success. It inspired a bright, if irreverent, article in the Spring issue of *Punch*.

The O.M.A. needed a six-day residential course to cover the subject of private secretary-womanship. *Punch* did it in a one-page non-residential questionnaire. This, moreover, touched on a few matters which the O.M.A. probably overlooked.

As education in a neglected field, the two pieces are complementary rather than competitive. Private secretaries who took the course should try to read the article (even if this involves an unnecessary visit to the dentist). Those who read the article should certainly enroll for the next course in a desperate effort to restore the *status quo*.

Consultant tie-up to aid EDP users

JOHN DIELBOLD, 31-year-old American authority on automation, is joining forces with Urwick, Orr and Partners Ltd., British management consultants. They are forming a new company—Urwick, Diebold Ltd.—which will advise British businessmen on the application of electronic computers in offices or factories.

Its consultants will be drawn from the partners' staffs. Later, training and appreciation courses will be held at the Urwick Management Centre, Slough, Bucks.

Computer service plans their production

IN its first year IBM's London data processing centre has been largely concerned with scientific work. But there is a growing interest in commercial applications.

An example is the development of a production control programme for Belling and Lee Ltd., makers of electronic components and TV aerials. This company decided to use the computing service because their sales planning was subject to a rapidly changing and unpredictable market.

Then it took three men three weeks to produce a breakdown of parts requirements whenever a change

occurred. Now one day is needed to prepare the stock figures and the computer produces a breakdown in a 30-minute run. Savings arising from the speed and greater accuracy of the forecasts already amount to many thousands of pounds.

How films help to train supervisors

THE trouble with films as a training medium is that some people expect them to do too much. There is a feeling that a movie 'takes over' from the instructor and gives him a chance to relax.

This is nonsense. Films have to be used with as much skill and care as any other training aid. Perhaps more.

Industrial firms have begun to break away from the idea of putting on occasional shows for large, mixed audiences of employees. Instead, they are favouring the application of group discussion methods to carefully-chosen film 'demonstrations'.

But more know-how is needed. For this reason the Scientific Film Association did a worthwhile job recently when they staged a four-day residential course on the use of films in supervisory training.

Ten students—mostly training officers from big firms—attended it. In syndicates, they discussed two issues: the adequacy of the supervisory training films which are available now, and the sorts of film which ought to be made during the next five years.

On the last day of the course they put their findings to a panel composed of a professional film producer,

a supervisor, the executive editor of *BUSINESS*, and the secretary of the S.F.A.

From a course of this sort, one doesn't expect world-shattering conclusions: much of the value of the discussions is carried away by individual members. However, there was some agreement—

—that many more films were needed, especially authentic case-studies in human relations.

—that it might be economically difficult to produce the right types of film, unless they could be given a fairly wide appeal (an obvious danger here!).

—that more could be done to make good use of existing material.

The S.F.A. hope to stage other courses on the same lines.

Industrialist advises: catch executives young

FRANK H. AYLING—one-time builder's labourer, now chairman of a £1 million engineering group—talked about executive development at a recent lunch meeting of Westminster East Rotarians. He advised:

—Catch the executives of the future while they are still adolescent and before social security ideas take root. Then help them to gain experience by allowing them to make their own decisions.

—A well-reasoned but speedy decision which is 80 per cent right is often more profitable than a fully correct answer which arrives too late.

—Top-level businessmen tend to make their jobs appear ponderous. It would be better if they admitted errors of judgement and maintained a closer liaison with the younger, more progressive men on their staffs.

—Companies need courageous men prepared to take a chance based on their best logic. A sound decision involving £1 is usually equally sound when £1,000 is involved.

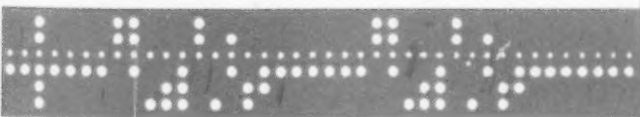
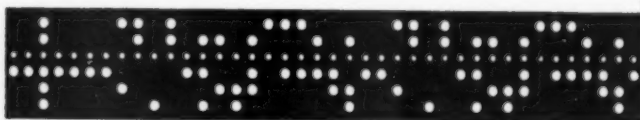
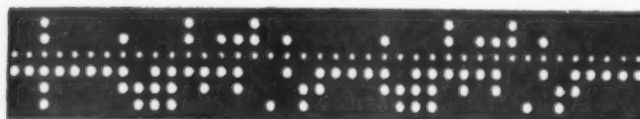
How environment affects accidents

ILLINOIS Institute of Technology have been investigating the effect of environmental factors on indus-

Advertiser's Annual

Owing to a printer's error, *BUSINESS BOOKSHELF* in the April issue referred to the 1957 edition of "The Advertiser's Annual". This should, of course, have been the 1958 issue, which may be obtained by completing the coupon on Page 101. Price net from a bookshop is 50s., or 52s., post paid.

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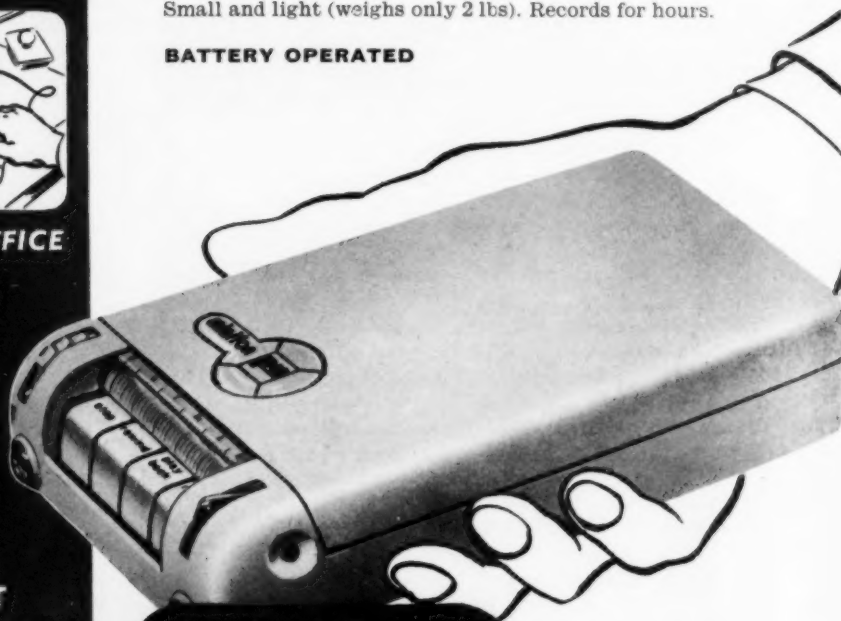
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trial accident rates. In a study of 147 American firms, they found that *high* frequency or severity rates were associated with:

—factories with seasonal lay-offs. (Possibly because lay-offs cause emotional insecurity; possibly because they reduce the number of experienced workers.)

—factories in slum areas. (Bad, overcrowded living conditions cause mental depression and preoccupation on the job.)

—factories in heavily industrialized districts. (Here, again, it seems that a lack of physical beauty in their surroundings gets under the workers' skins and makes them careless.)

—small factories.

The Institute's psychologists found that *low* accidents rates were associated with (a) factories which ran profit-sharing schemes and (b) those which were most severe in penalizing bad timekeeping.

Melodrama in the boardroom

THE affairs of the boardroom are seldom regarded as a subject for entertainment. One or two films have recently pursued the top executive theme (American style) but even here the working environment was only a setting for personality clashes which might have been played out almost anywhere.

So "Any Other Business", a new play at the Westminster Theatre, London, breaks new ground. It is the story of a prosperous Yorkshire mill which is suddenly threatened by a ruthless take-over bid. Desperate efforts are made to avert the threat. Each of them fails in turn. Gradually the board realize that one of their number is a traitor.

The drama and incidental humour lie as much in the battle as in its protagonists. Remarkably, the technicalities of the take-over bid are made comprehensible even to maiden aunts in the audience. Newspaper critics, with justification, praised the drama, suspense and entertainment value of "Any Other Business". We, therefore, can afford to look at it in a more businesslike way.

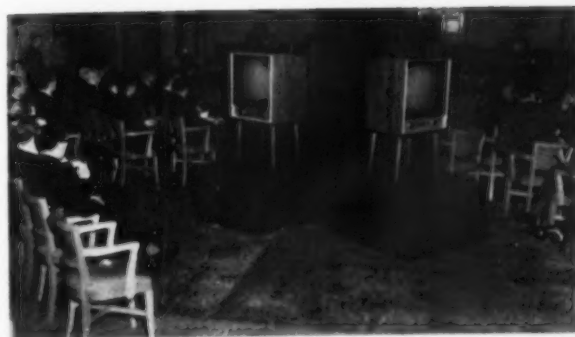
The play was written by Campbell

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TELLY-GENIC tests for packs were a feature of a recent packaging conference organized by Boffoldia Ltd. Carton users were first shown actual packs and were then able to see the effect of various designs on TV by viewing them on closed-circuit screens.

Singer (an actor) and George Ross (an accountant with working experience of a Yorkshire mill). Their boardroom and its inhabitants are pretty credible. The dignified chairman (Raymond Huntley) looks as though he could silence an unruly shareholders' meeting. The M.D. looks as though he could run a thriving business. The home sales director, with an overt lack of respect for expense accounts and women, looks nevertheless as though he could land some pretty hefty orders.

On the ethics of the bid and counter-bids, the authors tread a little warily. If the bid comes off, the shareholders will gain substantially; only the board will lose their heads. How, then, to make sure that the audience's sympathies are in the right place?

The authors' answer has been to inject blacks and whites into the characters. By and large, the directors are a good bunch. But the take-over bidder and his henchmen are obnoxious—and even the traitor turns out to be someone who is hardly a 'real' businessman.

So honour is saved. The virtue of being 'good chaps' triumphs. After the threat is beaten off (by methods which will make many businessmen sigh with envy) the shareholders are promised a bigger slice of the cake in future.

Employers knock EPA's 'union bias'

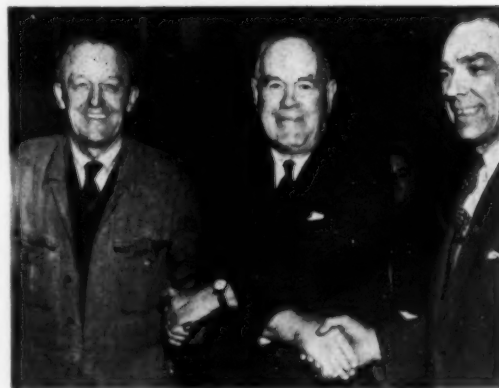
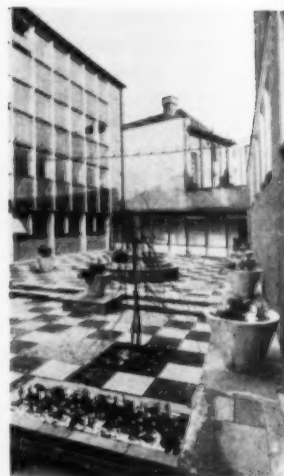
SOME aspects of the work of the European Productivity Agency are criticized by the British Employers' Confederation in their annual report.

During the past year, the Confederation say, they "have been obliged on several occasions strongly to criticize that part of the work of the Agency which is designed to assist . . . the 'free' trade unions of Western Europe."

Representations were made about several projects of this nature (including seminars, team visits and the dissemination of information) which appeared to "have as their object the promotion of purely sectional trade union interests and no direct relevance to increasing productivity."

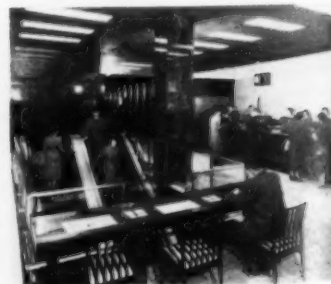
PEOPLE PRODUCTS PLACES 2

QUIET COURTYARD in the middle of Shoreditch, E. London, forms part of the rebuilt headquarters of the William Mallinson group of companies. The new building is a catalogue of the firm's timber products, for many woods feature in the internal decor. The exterior panels beneath the windows are plywood squares bonded to sheet steel—an effective and sturdy building material.



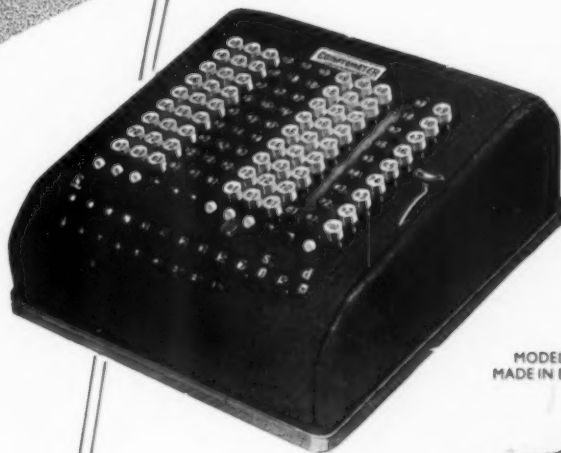
TO THE BALLOT box went the employees of G. Waddington and Sons Ltd. to elect two employee directors from a nomination list of 21. Maintenance engineer Albert St. Paul and supervisor Duncan M. Scott topped the poll, and were welcomed to the board by managing director T. E. Waddington. Employee directors hold office for three years.

(Photo: courtesy Hull Daily Mail)



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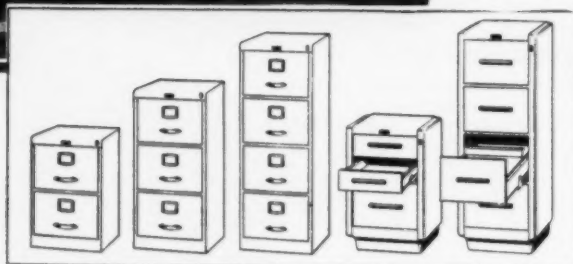
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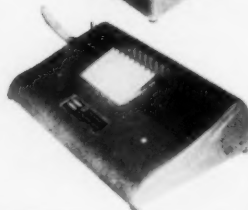
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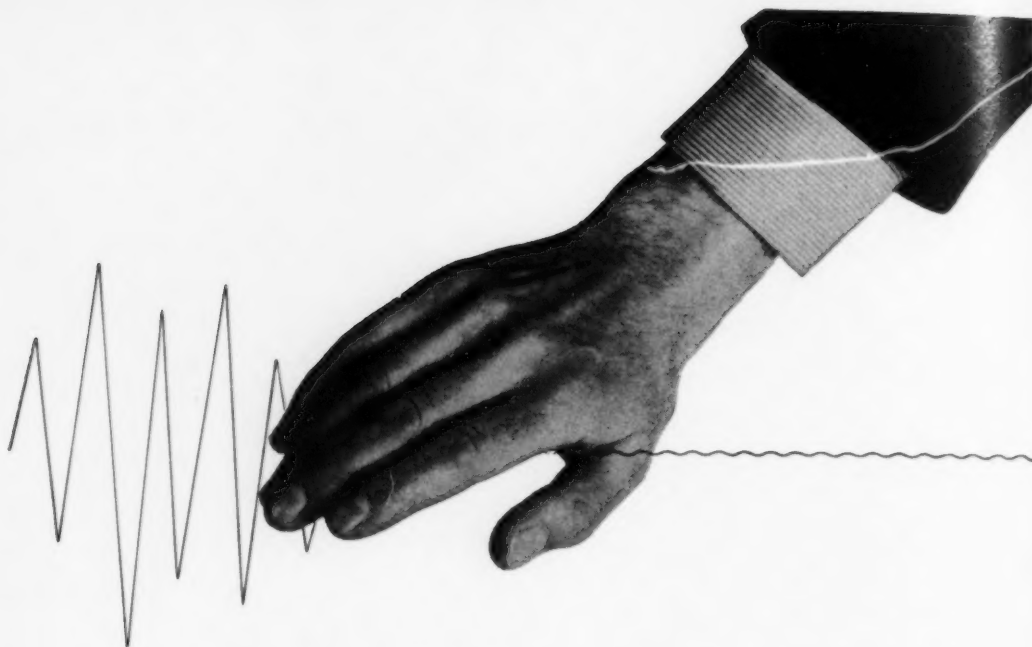
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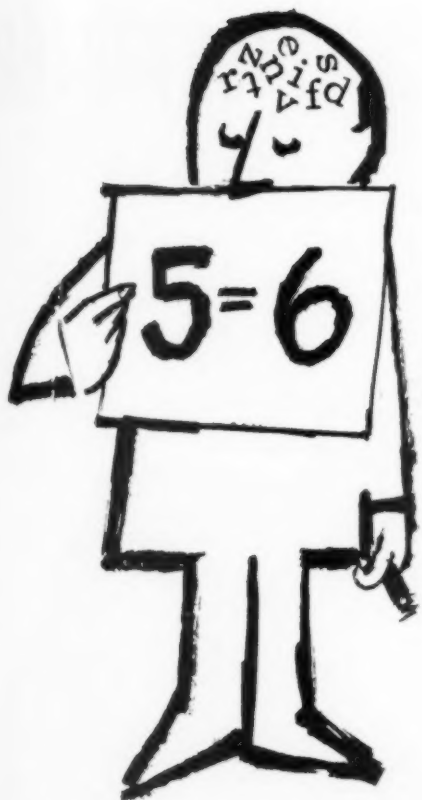
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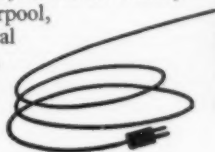
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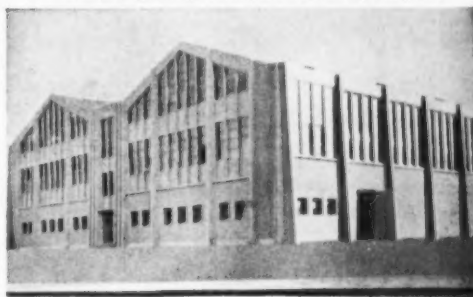
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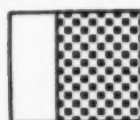


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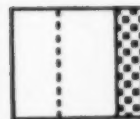
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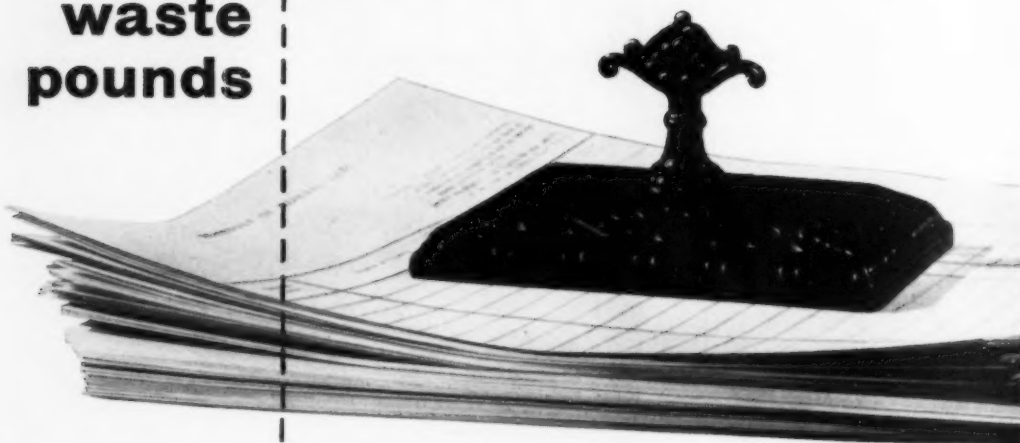
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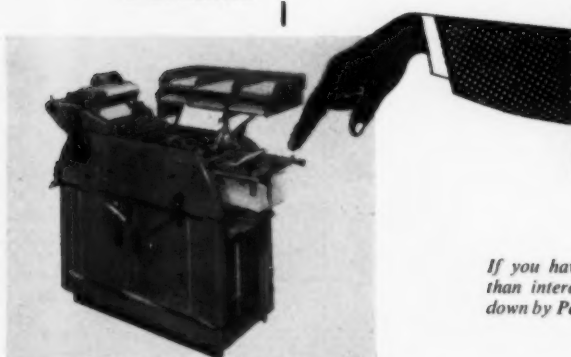
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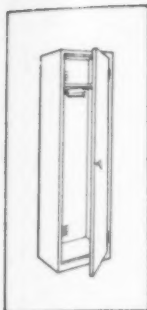
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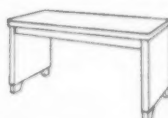
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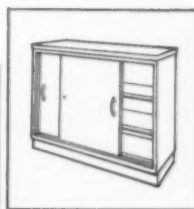
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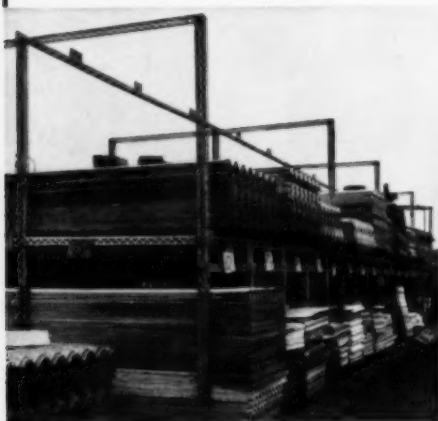
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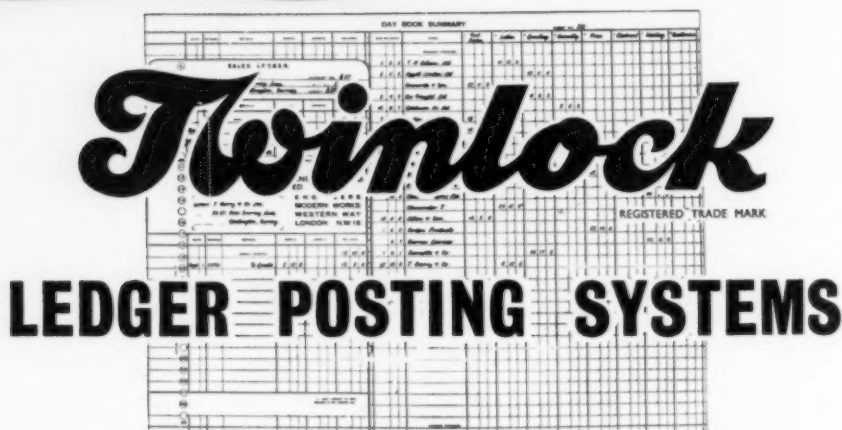
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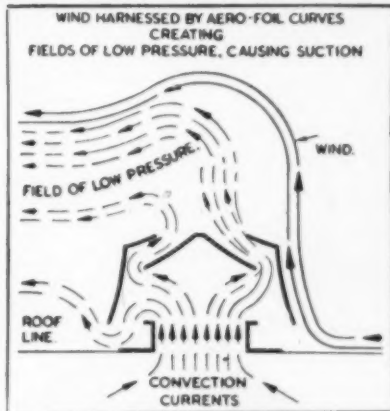
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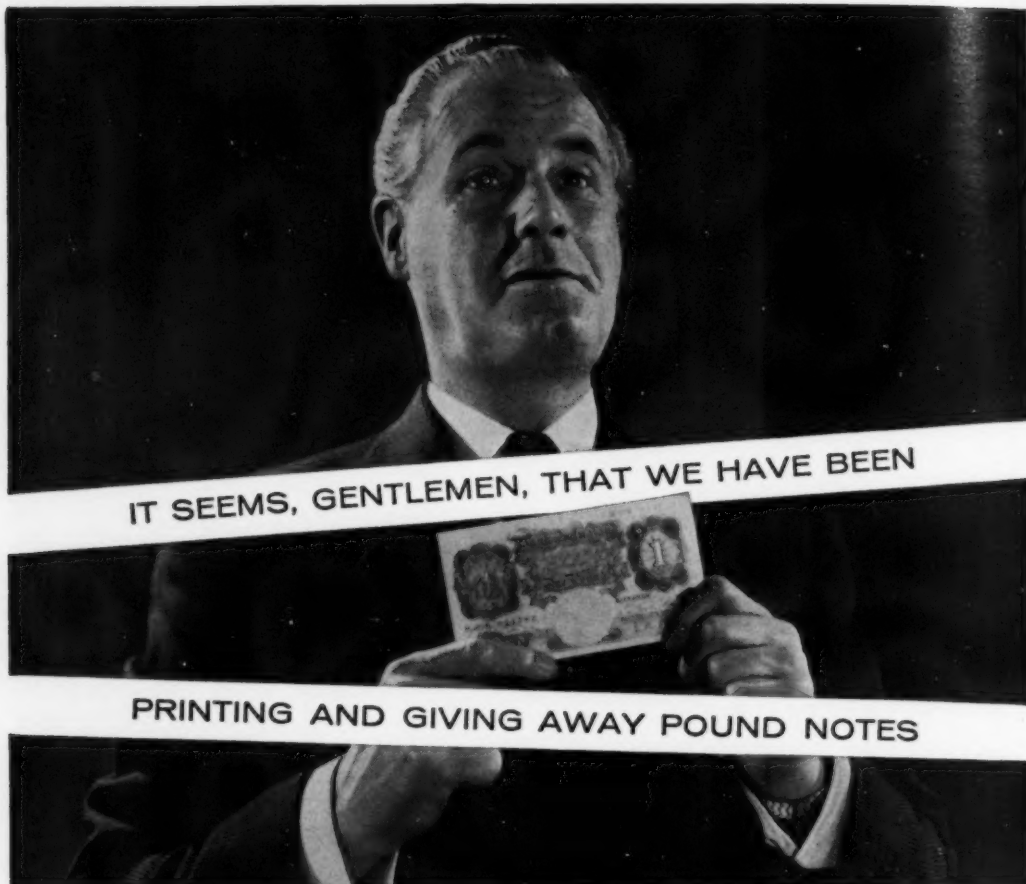


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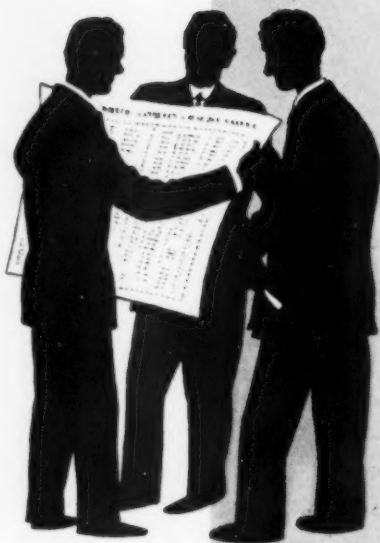
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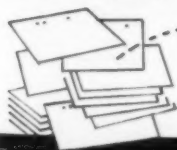
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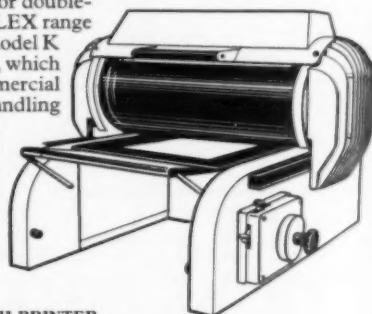
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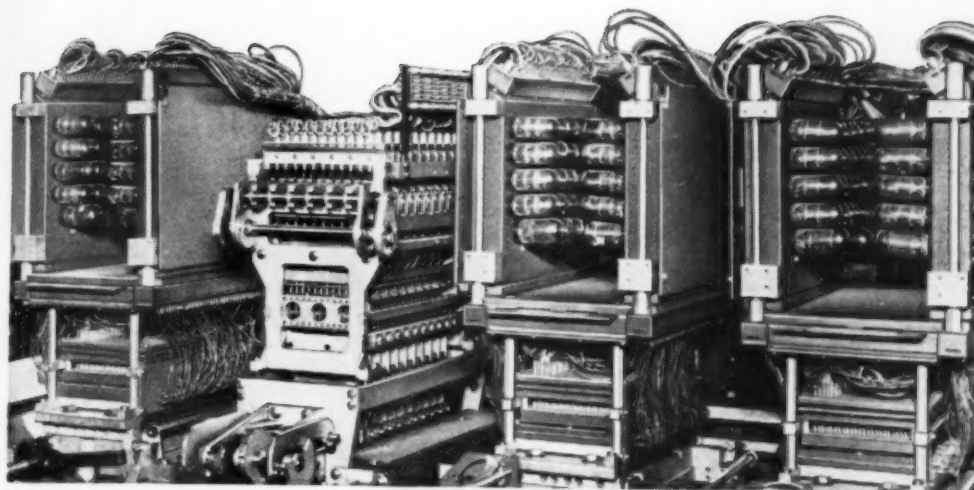
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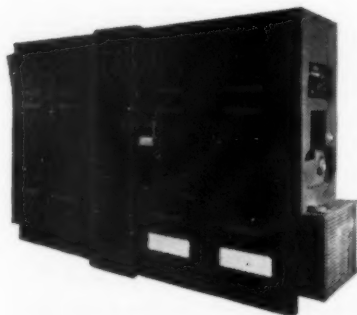
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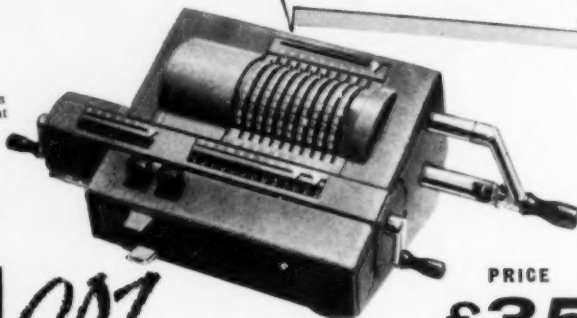
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Question What happens to the firm that pays hundreds of pounds for a calculator and then finds that an ODHNER 207 costing £35 could have done the same job quite as well?

Answer A large sum is written off to experience.

Moral Have a look at ODHNER first. A demonstration costs nothing, obligates nobody and can save a lot of money.



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CALCULATOR

PRICE
£35

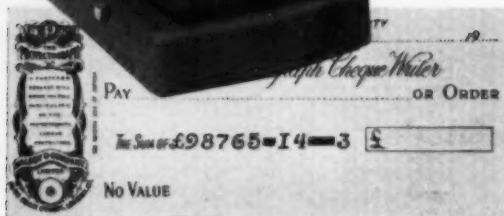
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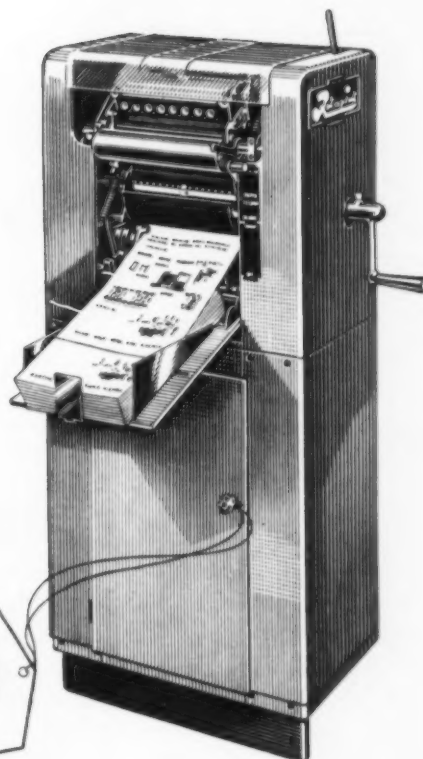
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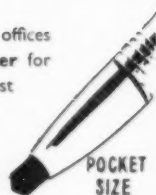
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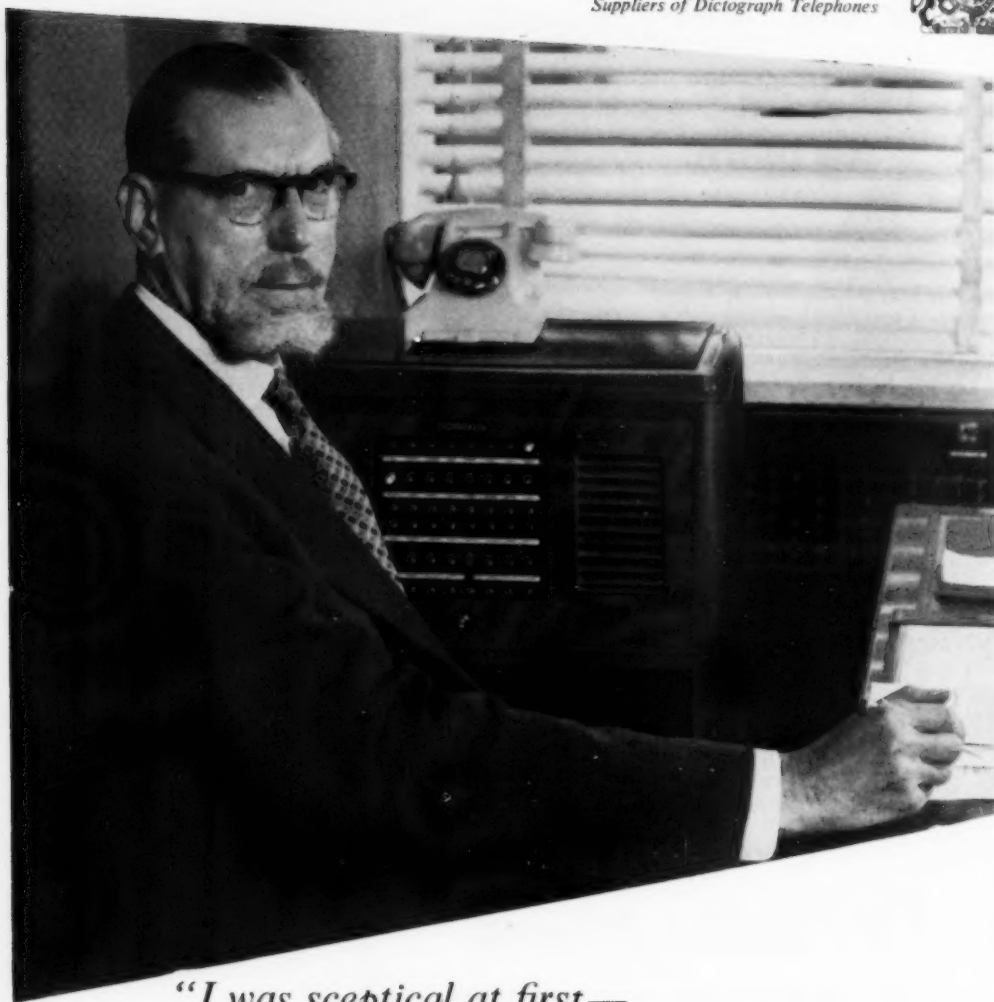


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Must Training Courses Charge 'Snob' Prices?

Sir,

Why are businessmen so gullible? The higher the price of an article or service, the more easily they are convinced that it is worth having.

Some time ago a non-industrial training school tried to put on a course for men from industrial firms. After due consideration, they decided that a fee of 20 guineas (for two weeks' non-residential training) would cover their costs and show a reasonable margin of profit. But the response was so small that the course had to be cancelled.

Recently the school revived this idea. But in the meantime they had been looking at the costs of industrial training courses. As a result they fixed the fee (for exactly the same programme) at 75 guineas.

Within a couple of weeks the new course was over-subscribed!

A. L. PITCAIRN

London N.W.

Strikes: do executives suffer?

Sir,

Referring to Alfred Robens' speech at a recent Industrial Co-partnership meeting (April issue, page 21) you state:

"To say that some managing directors do not have their pockets directly affected by a strike, does not mean that they are less likely to resist the strike weapon or union demands. On the contrary, a top executive's career prospects are very closely tied up with the labour relations of his industry and firm."

Doesn't this statement conflict with

some of the views put forward by Dr. George Copeman in his new book on employee shareholding, reviewed in the same issue (page 65)? He is at pains to convince his readers that industrial disputes are 'phoney' battles between the office-bound representatives of employers' associations and trade unions.

How often do individual executives have the authority to resist—or even capitulate to—the strike demands which threaten the prosperity of their firms?

G. WARD WATKINS

Southampton

Payment-by-cheque lead in Germany

Sir,

Why all this fuss about paying manual workers by cheque?

Some time ago, the German A.W.V. management group of the European Productivity Agency urged its members to pay employees by cheque *monthly*. Their suggestion was adopted satisfactorily by the biggest steelworks in Germany, with a labour force of about 20,000.

D. RHEINHARDT

London N.W.3

Selection is a job for management

Sir,

I feel that Henry Osborne, M.P., is being unduly idealistic when he talks about the need for at least two 'promotion ladders' in every firm (April issue, page 22).

There are many ways of measuring

a man's value. The fact that he is a worthy citizen and a conscientious worker does not automatically fit him for a seat on the board.

Mr. Osborne seems to imply that the rank-and-file employees of his company are better qualified than top management to gauge a man's capacity in *that* respect. I very much doubt it! Surely it is enough for management to take an intelligent interest in what their employees think—and then make their own decisions in the light of the special knowledge which they possess.

If my firm 'falls out with me' or 'doesn't like the look of me' I know just what to do about it. I don't hang about in the faint hope that my colleagues will recognize qualities which the people who pay my salary have overlooked.

PETER ROUPERT

Bradford, Yorks.

Phone coyness wastes time

Sir,

It is becoming increasingly common for businessmen to ask their secretaries or switchboard operators to make sure that the person whom they want to talk to is actually on the line before the call is put through to *them*.

The result is that one frequently picks up the telephone and has to wait an appreciable time before the person making the call is available to speak to. This seems to me to be both discourteous and time-wasting.

W. A. N. JONES

London N.20

Top Management Control

Are you getting the right facts for your type of business ? ▶

ONE of the biggest blocks in the way of improved business management is the objection that "my firm's different". Many a businessman would pay more attention to management methods proven useful elsewhere if he could be sure that they would be equally effective in solving *his* problems.

Now it has been established that firms are not so different as they at first appear. Many are strikingly similar in one very important respect—the policy and methods which they adopt to keep sales and production in step.

There are firms (e.g. large motor car manufacturers) who offer a small range of standard products of their own choice, design and specification, manufacture in anticipation of actual orders, and aim at immediate distribution to customers. They keep pro-

duction in step with sales through carefully prepared long-term and short-term demand forecasts.

There are others (e.g. shipyards) who do not manufacture in anticipation of orders, but on a contract basis, the final product taking a form agreed between the customer and the contractor. In these firms the balance between sales and production is maintained through careful analysis of the work content of the different contracts going through the production organization at the same time; the results of this analysis are related to production capacity, so as to obtain a basis for production planning and to ascertain whether there is any surplus capacity for which orders can be sought or accepted.

Others again set out to make and maintain a wide and comprehensive range of articles within a certain product class for sale from stock (e.g.

screws of different length, thread and diameter). They co-ordinate sales and production by setting maximum and minimum stock levels for each item in the range, the factory making batches of each item as and when stocks of it are about to fall too low.

Altogether, seven types of firm—each using a distinct method of co-ordinating sales and production—are outlined in the accompanying panels. (An earlier article, in the January 1957 issue of *BUSINESS*, p. 84, gave fuller descriptions of their characteristics and information needs.)

The significance of these findings lies in the fact that two firms with products as different as chalk and cheese can, if they belong to the same 'co-ordination type', expect to have similar planning and control problems. Once their management are prepared to recognize

To keep sales and production in step, different firms need different types of information. A new study helps managers to find out whether there are unsuspected gaps in their controls — or whether they are wasting time and money on getting superfluous data.

by H. Ingham and L. Taylor Harrington

TYPE A

Long-term quantity producers making and selling intensively one or a few products of their own choice, made in advance of orders for current sale.
Example: Mass-produced cars.

Characteristics

Aim is to ensure that current production is currently sold or distributed; do not normally hold stocks of finished goods. Decisions on provision or expansion of capacity are based on long-term forecasts, particularly if the firm must invest heavily in 'inflexible' plant or long-term research or development. Decisions on current production quantities are based on short-term demand estimates, orders in hand, finished goods stocks, and available capacity. Strong emphasis on sales-promotion to ensure optimum utilization of capacity.

Information Needs

For long-term planning: Long-term forecasts of general economic trends; of demand; of anticipated prices; of supply and cost of physical and financial resources, etc. **For short-term planning:** Assessments of short-term demand; information on orders in hand; on finished stocks position, especially stocks in the distribution pipeline; on availability of plant, labour and materials; forecasts of working capital needs. **For co-ordinating current activities:** Information showing whether actual sales and production are as planned; on actual against estimated costs; on actual and possible market changes; on inflow and outflow of money.

TYPE B

Stock-level producers which set out to make and maintain a comprehensive range of products of a certain class for sale from stock. Examples: Makers of screws, nuts, bolts, etc.

Characteristics

- ▶ More difficult to get long production runs because of 'randomness' of order inflow. Stock levels as low as is compatible with anticipated orders. Sales promotion establishes that comprehensive range is available for immediate delivery. Conditions for long-term co-ordination are set in advance by establishing maximum and minimum levels for each item; for short-term co-ordination, by seeing that item sales are broadly in line with these estimates.

Information Needs

- ▶ **For co-ordinating future activities:** Long-term forecasting is needed for investment purposes, but there is less emphasis on short-term forecasting. Production plans aim to maintain stock levels predetermined mainly by experience. **For co-ordinating current activities:** Information on current sales by item or group, with comparable figures for previous periods; on stocks plus production in hand, in relation to sales; on stock values and stock turnover by item or group; on inflow and outflow of money.

this, and to forget that their products are different, they can learn from each other to a degree unknown before.

This discovery was made during a study which the British Institute of Management undertook in response to a suggestion from some member-firms, who felt that it was unwise to advocate the use of certain 'package' techniques of management control without taking into account the conditions in which they could usefully be applied. The BIM team visited 45 selected member-firms, and asked their managing directors or general managers what information they used in order to plan and control business operations, and why.

At first the replies seemed quite bewildering. Although some of the

firms used similar sets of management controls they were different in many respects, such as size, products, production equipment and materials used. However, a further look at their characteristics revealed that the similarity in the information they used reflected a more basic similarity, namely, a common approach to the question of co-ordination of sales and production; this in turn gave rise to almost identical planning and control problems. It was therefore not really surprising that even though the firms concerned were of different size and industry their top managements wanted information covering almost identical points.

To test the validity of these findings the preliminary report was sent to a considerable number of BIM mem-

ber-firms which had not taken part in the investigation. The covering letter suggested to each firm the type to which it seemed to belong, and asked whether (a) it was really like this; (b) it fell into another of the types outlined; or (c) it was not covered by any of them.

The replies have showed that the basic principle stated in the preliminary report is sound. Of the 120 additional member-firms approached so far, 86 have said that they can definitely identify themselves with one of the original six co-ordination types. They have thus recognized that they need a specific set of general management data to help them in dealing with these problems.

In this respect, therefore, each is similar to all other firms of the same

TYPE C

Manufacturers offering, on 'catalogue' basis, a wide range of products made to customers' orders. Example: Makers of range of electric switches.

Characteristics

- ▶ Production is initiated on ad hoc basis, so planning presents considerable difficulties and work-in-progress tends to accumulate. Price quotations may be made unprofitable by changes in material costs before delivery. Large variety of material stock items have to be held—a potential threat to liquidity—but investment risks are lower than Type A's since it is unnecessary to install 'inflexible' mass-production plant. Neither rate nor content of order inflow is predictable, so co-ordination is necessarily short-term.

Information Needs

- ▶ On order inflow and orders executed, supplemented by regular statements detailing orders in hand; on inflow and outflow of money; on changes in cost of major production factors (from internal and external sources).

type and can almost certainly learn from their experiences even though they may make entirely different products.

The range of products made by firms of the same co-ordination type is striking. For instance, in Type A there are firms making:

cement, glass, pharmaceuticals, cosmetics, machine tools, domestic electrical equipment, motor vehicles, domestic cookers, razor blades, cotton and man-made fibre textiles, confectionery, beers, cigarettes and tobaccos, margarine, soft drinks, domestic furniture, greeting cards, loose leaf accounting equipment, photographic equipment.

In another co-ordination type there are firms making:

ceramics, pharmaceuticals, non-ferrous metals, electric switches, motor car accessories, screws, cotton textiles, gramophone records, stockings, shirts, pyjamas, confectionery, household

paper products and photographic equipment.

In yet another type there are firms manufacturing:

paint, electric switches, bodies for lorries, scientific instruments and ladies' blouses.

What is so striking is not only that there is a wide variety of products made *within* a given co-ordination type, but that the *same* product (e.g. electric switches) is made by firms of *different* co-ordination types. **This means that although these companies make similar products, their top management planning and control problems will be different, so that they are not likely to learn much from comparing their top management control methods.**

What are the practical implications of all this?

● Our findings can give managers a *standard* by which to judge whether they are at present getting the right kind of information for planning and control purposes. Many managing directors, in trying to answer the question of what information they should have, tend to ask themselves what 'techniques' their firm should use. For instance:

- Should we have budgetary control?
- Should we have standard costing?
- Do we need market research?
- Should we have systematic business forecasting?
- Do we want operational research?
- Would it be useful for us to have an electronic computer?

There is a danger that unless such

TYPE D

Manufacturers specializing in production of large quantities of goods to customers' orders and specifications. Example: Customer-designed packaging materials.

Characteristics

- ▶ Opportunities to benefit from long production runs. But to make detailed and long-term production planning decisions, they may have to get advance information on customers' own production plans. Financial risks include bulk-buying for orders which fail to materialize; installing special plant (to meet individual requirements) which may be under-utilized should customers' plans change.

Information Needs

- ▶ **For co-ordination through long-term production planning:** Advance information on customers' requirements (either direct or through forecasting demand for products of industry concerned) related to output capacity of production departments. **For co-ordinating current activities:** information on actual as against estimated order inflow; on the inflow and outflow of money.

'technique' questions are answered by reference to those special features and circumstances of the business which determine its management information needs, managing directors may find themselves wasting time and effort in going through superfluous or inappropriate information which costs their firms a considerable amount of time and money to produce.

Now it can be suggested to managing directors and general managers that they should look at their information needs in an objective way; that they should analyse their planning and control problems along co-ordination type lines, so that they can then say: "My firm is like *this*, therefore it needs *that* planning and control information."

Several of the firms which received the preliminary report outlining the co-ordination types have already said that they had not previously appreciated how much superfluous information their top managements were receiving. Others have realized what gaps there are in their present management controls.

- The co-ordination type approach appears to offer a quick method of diagnosing the management problems of firms and of recommending suitable remedies. For this reason it may be of considerable interest to management consultants.

- It may help manufacturers of electronic data processing equipment to adapt their products more specifi-

cally to the needs of different types of firms.

- The co-ordination type approach may well have considerable long-term impact in the field of management education and training. Those concerned with teaching the subject of management controls have not hitherto been able to deal specifically with the question of the different sets of management information appropriate to different types of firm; thus neither general managers nor professional specialists have been trained to think in terms of determining the information requirements of a particular firm by reference to its typical set of management problems. It is hoped that the new findings, when developed and refined, will help to train them in this way.

END

BUSINESS

TYPE E*

Contract manufacturers of capital goods of high unit value in form agreed with customers. Example: Large electrical generating plant.

Characteristics

- Operations often involve construction *in situ*, so there is usually a high degree of flexibility. Decisions on plant extensions are related only to estimated demand for firm's services. No capital is tied up in finished stocks, little in material stocks; therefore liquidity risks are fairly low. Co-ordination in planning is achieved by integrating different contracts into long- and short-term plans designed to satisfy customers and use resources economically without accumulating too much work-in-progress.

Information Needs

- For long- and short-term planning:** Information on delivery or part-delivery dates for each contract; work content on contracts in hand (particularly processes common to different contracts); material and parts availability; production capacity. **For quoting for new contracts:** Analysis of each new contract (man-hours, materials requirements, etc., at each stage, plus anticipated costs); information on existing commitments in long- and short-term plans. **For co-ordinating current operations:** Information on the progress of new contracts; on actual against planned production and deliveries; 'danger' figures referring to such matters as excessive work-in-progress; information on money flow and outflow.

*A separate category—EII—has been created for building contractors. Although these have broadly the same information needs as other contractors, variations take into account such things as sub-contracting, the necessity to work mainly on site, and the tying up of capital in finished buildings.

TYPE F

General or jobbing manufacturers, offering production service in specific field. Examples: Jobbing foundries, printers and general engineering shops.

Characteristics

- No capital tied up in finished stocks; materials not held in any quantity unless scarce; so liquidity risk is low. No investment in 'inflexible' plant. Production planning presents considerable difficulties and work-in-progress may accumulate. Co-ordination of activities is necessarily short-term.

Information Needs

- On order inflow and orders in hand, in relation to orders executed; on major cost items (danger of materials price rises between quotation and delivery); on the inflow and outflow of money.

*This
modernization
programme
gave them*

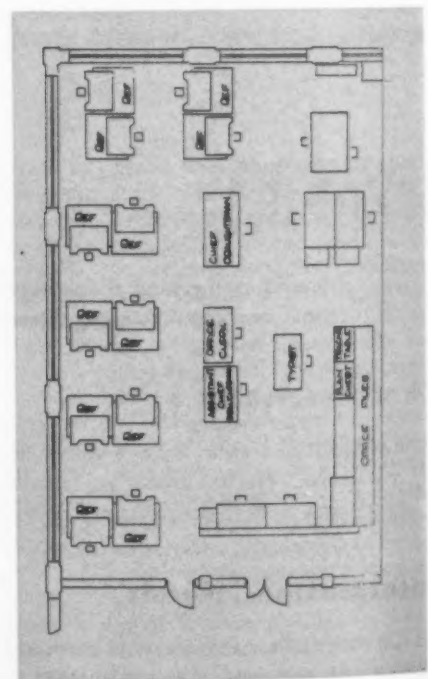
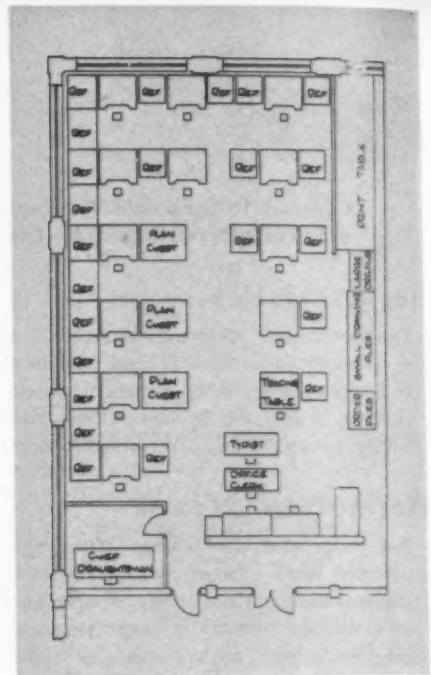
Faster Production from

by Stephen Rose

How they reorganized at
Dubilier. Old-style lay-out
(above) took up too much
space and gave bad lighting.

New arrangement (right)
shows desks side by side but
facing in opposite directions.

Draughtsmen are sited
near windows and the chief
draughtsman is more accessible



**It cost £1,500 to re-equip
12 draughtsmen — but space has
been saved, recruiting is easier
and productivity is up 30 per cent**

the Drawing Office

UNTIL recently, Dubilier Condenser Co. Ltd., North Acton, had the same difficulty as many other firms in staffing their drawing office. After spending over £100 on advertising during one recruitment period, they consulted the chief draughtsman.

He told them that applicants in this competitive market not only look for pleasant working conditions, but also expect good, up-to-date equipment. Since Dubilier at that time still had the traditional fixed horizontal drawing board and T-square, they were losing good applicants to other firms in the area who were better equipped.

This was the main reason for a reorganization and modernization plan that was completed about six months ago. Previously, the company had been reluctant to spend money on a department that seemed to be working quite efficiently with the equip-

ment it had. Now they gave the chief draughtsman the go-ahead to draw up plans and estimates.

One result of this move has certainly been to put the company on equal terms in the fight for staff. They now have an office which is above the general average.

But the reorganization has paid off in quite different ways too. Operating efficiency, speed of output, quality of output and morale have all gone up beyond expectation. While it is difficult to arrive at accurate figures in such a case, the head of the department estimates an overall increase in efficiency of quite 30 per cent.

In other words, the expenditure—which in any case amounted to under £1,500 in all—has turned out to be a sound investment bringing ample returns. Here are some of the ways in which that result has been achieved: ▶The basic unit chosen for the new office is a combined draughting/refer-

ence table. Sturdily built of wood, it has a plan drawer at the top, two locking personal drawers, and a cubby-hole.

The drawing board is mounted at one end on an adjustable pivot base, to give a full range of positions from horizontal to fully vertical.

Five of the boards have been fitted with standard draughting machines. These have proved so successful in use that the other boards will soon have them too. In the meantime, parallel motions have been fitted—already a great improvement on the simple T-squares that were used before.

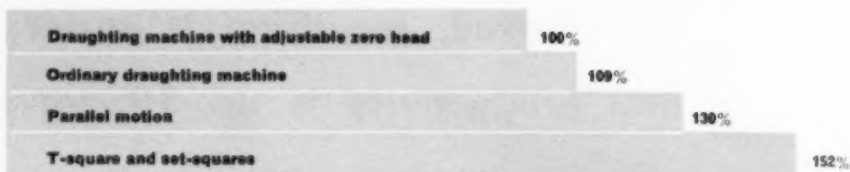
The cost of this equipment was:
Reference table, drawing board and draughting machine: £81.
Reference table, drawing board and parallel motion: £54.

▶New equipment was also the signal for a reorganization of the work area (see layout diagrams). The chief

The facts on draughting machines

On the Continent something like 95 per cent of all drawing offices are equipped with draughting machines. In this country the figure is probably under 40 per cent.

The equipment only costs about £40, but the increase in efficiency which it brings about is considerable. The Battelle Institute—an independent research organization—recently conducted tests with various equipment. These were the average work times:



General argument against draughting machines is that they are inconvenient when long horizontal or vertical lines have to be drawn. But a Battelle test which was supposed to prove this showed quite the reverse. On an architectural layout the results were:



draughtsman had his office pulled down, and moved to a desk in the centre of the room. He felt it was time-wasting for him to be stuck away in a corner. People who had to see him had to go the furthest distance, and often there was a small group waiting to go in. Now draughtsmen who want to consult him can see without leaving their desks whether or not he is free.

►The positioning of the new reference tables was given much thought. The modern fashion for back-reference (where the draughtsman uses the desk of the man behind him) was finally ignored. Tests made in the office showed conclusively that for the type of work done at Dubilier, side reference was faster and more convenient.

So, as the illustration shows, the previous arrangement was replaced by one that took up only half the room, allowing all twelve desks to be sited near natural daylight.

The desks are now arranged in pairs, side by side but facing in opposite directions. Each uses the other's table for reference and storage. The slightly staggered arrangement gives greater accessibility to the reference surface from a sitting position at the drawing board.

►In place of the old copying equipment, an automatic, continuous diazo machine was bought, combining both printer and developer in one desk-top unit. Drawings up to 45in. wide are fed in, together with a sheet of copying paper. Feed bands take them past a mercury vapour light

source, eject the original and pass the copy through an ammonia developer. Exposure and development are fully synchronized, and speed range is from 2in. to 15ft. per minute.

This machine is so efficient that it is used only in the afternoons, the copying section devoting the mornings to clerical work. Already it has been possible to dispense with one full-time and one part-time employee in the section. This alone will repay the cost of the equipment—£570—in under a year. Meanwhile the drawing office is getting better print quality and faster service.

Other improvements

Dubilier's drawing office has many other good efficiency ideas. These include:

► **Yellow carbon backing for pencil drawings.** Previously, important figures, dimensions and lines, were inked in to ensure good reproduction. Now, using a special yellow carbon backing that costs relatively little, no inking need be done at all—a considerable saving of draughtsmen's time. The backing brings out even the faintest pencil lines cleanly and crisply on photo-copies.

► **Smaller format for detail drawings.** Investigation showed that too much filing space was needed for drawings of little permanent value — mainly details for larger designs. So a new size was introduced (9in. by 6in.) which fitted neatly into some existing filing cabinets—a considerable saving in space.

► **Plastic-coated cover paper.** Instead of the cartridge paper that traditionally covers drawing boards as a working base, Dubilier now use a plastic-coated material that costs less and lasts longer. It has a smooth, glossy surface. Drawings attached to it by adhesive tape come away cleanly, leaving the cover paper intact.

The colour used is green. This has been found to be more restful to draughtsmen's eyes.

Two major points remain to be covered at this firm. The first is the provision of adjustable modern seating for the drawing office. Without this the full benefits of adjustable boards will not be felt.

The second concerns draughtsmen themselves. They were so used to working on a horizontal board, no matter how inconvenient, that it is taking longer than had been thought to get them working vertically, although it has been proved that this will increase their output and relieve a considerable amount of work fatigue.

When action has been taken on both these matters, the chief draughtsman is confident that productivity will rise even more than it has already done. But for the moment he is content to have speeded up working enough to overcome the backlog of work that nearly always faced his department, and to know that orders can now be delivered punctually. *END*

MAY, 1958



Horizontal or vertical ?

Most drawing boards are still horizontal, with or without a small angle adjustment. But tests have shown that vertical working is quicker, cleaner and less tiring. The illustrations here show why this should be so. With a horizontal board (top right) working is only comfortable near lower edge. But adjustable vertical board (left) gives good posture and accessibility in all positions.



Which looks easier ?

These movement diagrams result from a special photographic process. A small electric bulb was attached to a draughtsman's right wrist to show movements of the hand in drawing a simple triangle. In the left-hand diagram he is using a T-square and set-squares. On the right he is using a draughting machine.

Here are three of the many ways in which isocyanate foams are now being used: (1) in vehicle upholstery (plastic welding takes the place of stitching) (2) for lagging, foams are light and easy to handle; (3) cloth stitched to either side of a foam sheet makes an efficient quilt of very low weight



New Plastic Foams

by William Guthrie

TAKE a liquid comprising about 100 parts by weight of polyester (plastic), four parts water and one part wetting agent. Add 120 parts of isocyanate, agitate with a food mixer, and pour. The liquid forms a pool at the bottom of the receptacle. After a few minutes it begins to froth and foam and eventually spreads out to the sides.

What happens is that carbon dioxide is generated in the liquid and forms bubbles. Due to the stretching power of the foam, the bubbles do not break, but remain separate. As the reaction continues, the foam spreads up the walls, clinging closely to them, until it has expanded to about 20 times its original volume. Then the reaction gradually subsides. The foam cools and sets after a few minutes.

Isocyanates are complex chemical liquids which, when added to resins, produce compounds with completely different characteristics. They promise to be of as much value to industry as other 'wonder' chemicals, like silicones. Various applications during the last few years have included

lacquers, textile coatings and special adhesives. But the ability to make plastic foams is their most spectacular achievement.

There are two types of foam: flexible and rigid. Their 'wetting' or sticking power is immense; they will, in fact, stick to anything except polythene. It is this property which gives rigid foams, *poured in situ*, unique advantages for fabrications of many types.

Various densities of rigid foam can be produced according to the formula used—from about 8lb. per cubic foot to 2lb. per cubic foot (water weighs 62.5lb. per cubic foot). Quick-foaming mixtures give very light foams. In extreme cases they are only semi-rigid, but these have special uses.

Flexible, rigid and semi-rigid foams can be made on a small scale in the way indicated above. On a larger scale, however, fairly expensive plant is required. Rigid foam production is safe but volume production of flexible foams generates toxic fumes and requires extraction plant. In addition, special mixing and pouring

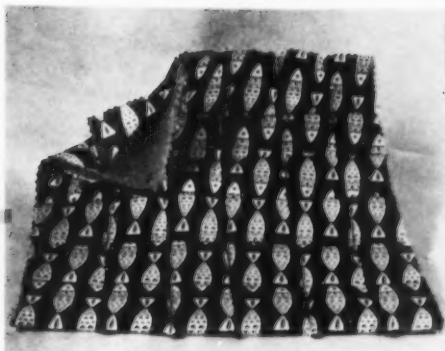
devices are essential when making flexible foams, to prevent foam formation before mixing and pouring are completed.

Flexible Foams

These have applications in almost every industry. In upholstery especially they can revolutionize production techniques.

Plastic foam cushions, cut from the block to a simple rectangular shape, do not necessarily give the same type of seating as a latex cushion of same size and section. This is because the strain/compression characteristics of the foam can be varied widely by formulation, as well as by profiling the block with hot wires, shaped to produce 'eggcrate' contours, or deep ridges. By either method comfort similar to that of latex cushions is obtained.

Textile covers can be stitched directly to the foams. Or, using high frequency heating, plastics covers can be welded to the foam along lines at regular intervals, to give a padded or quilted effect. This is specially useful for car coachwork. Briggs Motor



s are Versatile

- ▶ Lighter fabrications, from refrigerators to buildings
- ▶ Heat insulation of all types, from clothing to industrial plant

Bodies, Dagenham, where all Ford cars are upholstered, are using isocyanate foam on a very big scale; so are the British Motor Corporation. Upholstering can thus be converted from a craft to a mass production technique.

Thermal insulation factor of isocyanate foam is excellent, because it comprises largely bubbles of still gas or air, which are excellent insulators. Blocks of foam are easily cut to the exact shapes required for insulating pipelines, tanks, etc.

Advantages of the material are that it is light (weight is an important consideration with long runs of suspended pipes) and the pieces are easily detached for inspection. Wetting or contamination by oils, petrol, or most chemicals does not affect its properties.

Foam does not 'bottom' easily—its resistance increases the more it is crushed. This makes it an attractive material for lining car dashboards in order to mitigate the effects of accident. The instrument panels of Jaguar cars, for instance, are now mounted on a foam gasket to give a

cushioning effect in the event of an accident.

The crush-resistance of plastic foam makes it ideal for lining the edges of doors in vehicles and buildings, reducing draughts and the noise of slamming. Mounting is easy, as it takes various adhesives well.

The open bubbles on the surfaces of foam that has been cut make excellent sound absorbers. Foam is therefore incorporated in certain acoustic tiles, where its extremely light weight is an additional advantage.

Foam only $\frac{1}{2}$ in. thick sandwiched between pieces of cloth, makes an excellent heat insulator. It is used for quilts and for making light, efficient linings (which do not cause condensation) for coats, where its capacity for being sewn is especially advantageous.

Rigid Foams

Rigid foams—pioneered in this country by the Dyestuffs Division of Imperial Chemical Industries Ltd.—are proving exceedingly versatile because of their lightness and the hard-

ness with which they set. But their biggest asset is that they can be made on the spot—which distinguishes them from prefabricated types of 'sandwich' material.

Thin plywood or metal walls, with a sandwich filling of rigid foam, have a strength out of all proportion to their weight. The walls can be built in steps of a few feet at a time, using semi-portable mixing and pouring plant. The foam adheres to both walls with great power and strengthens them.

Although, volume for volume, rigid foam has a thermal conductivity value about the same as that of materials like glass wool or fibre, its closed-cell construction eliminates convection currents and moisture. As a sandwich filling for curtain walling panels, it improves insulation without materially increasing weight.

The statutory enforcement of thermal insulation in new factories, and the prospect of its extension to new houses, is likely to give great scope to isocyanate foams. They can be applied by a special apparatus which mixes the liquids and sprays them at



Its strength and sticking power make rigid foam ideal as a sandwich filling for walls and partitions

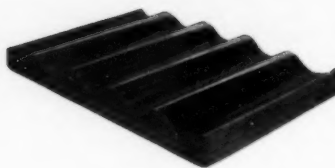
Why Foams ?

RIGID FOAM

Weights very little
Can be made on the spot
Offers good thermal insulation

FLEXIBLE FOAM

Crush-resistant
Can be sewn or welded
Absorbs shocks



When rigid foam is sprayed on to a wall or roof it adheres closely and permanently. Corrosion of the outer wall, common with loosely bonded coatings, due to condensation, is eliminated

high pressure. Netting and other keying devices are not necessary. The weight added to the roof structure is far less than with sprayed asbestos.

Because the foam adheres so closely to the parent surface there is no chance of condensation, which would produce corrosion and which is responsible for much damage to buildings insulated with loosely-bonded or porous materials.

Other Uses

One large firm are designing a refrigerator around rigid foam. Using plastics panels that are both thinner and lighter than usual, they are taking advantage of the strength added by a plastic foam sandwich filling. Result is a lighter product with more storage space.

Repairing damaged plates on the outside of a ship's coldroom is normally an elaborate affair—the insula-

tion has to be removed because of the danger of damage from welders' torches, but this is not necessary with the new foam. Repairs to a cold-room insulated with it consist simply of cutting away the damaged plates and replacing them.

Teak, used for the decks of some ships because of its great durability under marine conditions, is scarce and expensive. Prospects are that it may be replaced by an aluminium-foam sandwich—cheaper, lighter and just as strong.

The new foams are extensively used for buoyancy chambers in lifeboats, net floats and marker buoys, and for emergency rafts and lifejackets, because of their resistance to water absorption.

In the U.S. rigid foams are used in the construction of car-top dinghies, filling the cavity between two plastic skins. If one skin breaks, the dinghy remains serviceable until the break can be repaired.

One of the first applications of rigid foam was in the fabrication of small aircraft parts like ailerons. A foam filling replaced internal metal strengthening members and the smooth unriveted surface makes an excellent aerofoil.

Some semi-rigid foams are being used for lining crash helmets and for other special shock-absorbing applications.

Already some companies in America are using the foamed-in place technique for lining containers of fragile goods. The constituent liquids are stored in drums for use as required.

The container itself is the mould. As in foundry practice, cores are inserted to give any required cavity to fit the goods. They are protected by polythene film or furniture polish. Then the mixture, made up in small amounts as required, is poured. When foaming is complete the core lifts away cleanly.

END

BUSINESS

How to Tell the True Profits Story

THERE is a great deal of misunderstanding about the profitability of industry. Many people have the wrong impression that profits are far greater than they are—to the detriment of good relations between industry, its workpeople, the general public, and politicians.

It is up to businessmen to see that steps are taken to present the *true* picture to those who are not trained accountants.

Definition of Profit

What is the correct meaning of the word 'profit'? An accountant of high repute has defined it as:

"... the money left over after all charges have been met and provisions made to ensure that the business will continue at its existing level as a permanent activity."

This is a simple, reasonable and easily understandable definition.

Most company revenue accounts start with the words 'gross profit' or 'trading profit.' These usually refer to the financial position *before* the necessary amount has been allocated for the replacement of plant as it wears out (depreciation) and before charges for directors' emoluments have been made (both as directors who decide the policy to be followed and, very frequently, as executive managers of the day-to-day operation of the business). Frequently there are other charges, such as pen-

Company revenue accounts often
mislead employees and others.

Businessmen must see that the word
'profit' is used more sensibly.

by H. Cedric Cunis, B.Sc.(Eng.), Chairman, W. R. Cunis Ltd.

sion contributions, which have not been deducted.

Obviously it is nonsense to talk of the profit of a company, even as a 'trading profit,' until such items have been allowed for. Moreover, the figure usually taken for depreciation is one calculated on the original cost basis, but due to the enormously-increased costs of equipment in recent years, this is an inadequate sum to allow.

In line with the definition, it is equally absurd to talk of a profit before income tax. If companies do not pay their tax dues to the Government they will go bankrupt.

In the analyses published by the *Financial Times* as monthly reports on the progress of companies, the figure referred to in revenue accounts as 'gross profit' or 'trading profit'

appears in a column headed with the single word 'profit.' This is the only place in the table where the word 'profit' appears, and such figures have been quoted in wage applications by trade unions.

Generally the *true* profit of a company, as shown by the revenue accounts, and subject to the question as to whether an adequate depreciation allowance has been made, is of the order of one-third to one-half of the figure quoted as 'trading profit.'

Inflation and Taxation

Much more must be done to establish the effects of inflation and taxation on industry. Here are two examples which illustrate these points:

Example 1 concerns the steel barges or lighters in which over 50 per cent

continued on page 145



'Say it with pictures' was B.P.'s policy when selling shareholders on the oil industry's contribution to agriculture. From time to time cartoons and other films are shown to shareholders in hired cinemas

How to Get on Better



— *they can*

"**S**HAREHOLDERS have a very real right to the annual report and accounts through which we strive to give a full yet formal record of (our) husbandry. . . . That, however, is not enough. They are, I believe, entitled to know a great deal more about the background and detail of their property and our work all over the world. . . . Public interest is a spur to industry . . . everywhere and at all times."

The speaker is Sir Eric Vansittart Bowater, prefacing his annual report for 1957. Few people would challenge what he says. But in the vast majority of public companies, shareholders get no attention, save for the formal annual report or the rare occasions when they form committees to complain about company mismanagement.

A few firms, nevertheless, have tumbled to the fact that communication with shareholders can bring

many indirect benefits, quite apart from the usefulness of having company policies understood and appreciated.

Some, for instance, believe that shareholders who are already favourably disposed towards a firm make excellent customers or prospects. They therefore circulate shareholders with information about the company's products and brand names.

Callard and Bowser Ltd. sent samples of their confectionery products to Guinness stockholders when the firm was taken over last year. They followed this up in January with further information about themselves and the confectionery trade. This cost them no postage, for Guinness stockholders received this literature with their dividend warrants.

Ind Coope and Allsopp Ltd. also try to keep their shareholders interested in their products. When they introduced *Long Life* canned beer in

1956 they offered to send two sample cans to all 30,000 shareholders if they would fill in a pre-paid reply card. Over 17,000 people accepted, and reply cards are still coming in.

Ind Coope and Allsopp have also circularized shareholders who live in the southern counties with the wine list of their subsidiary, Grant's of St. James's, pointing out the facilities that Grant's offer as wine merchants.

Whose Responsibility?

In the United States, shareholder relations are given much more attention than in this country. Some large companies even have a vice-president to deal with the subject. He usually works in conjunction with the company's public relations department, though his functions are quite distinct. His duties may be listed as:

► **Financial Publicity.** This includes

BUSINESS

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by Philip Marchand

uncovering and developing company news of interest to shareholders; contacting and cultivating friendships with financial editors; preparing press releases on annual and interim reports, production statistics, executives' speeches, proxy fights, etc.; granting interviews to financial reporters and feature writers; supplying requested information to statistical agencies, investment banking firms, etc.

► **Shareholders' correspondence.** This includes sending letters of welcome to new shareholders; answering requests for financial and other information; following up investor complaints, even those of small shareholders; sending letters of thanks for signed proxies; explaining exchanges of shares, scrip issues, etc.

► **Shareholder surveys.** The vice-president has a better idea of whether

investors are satisfied when he knows how shares are distributed, who holds them and how long they are retained. He tries to find out the readership of company annual reports and other statements. He uses lists of shareholders for sample surveys and to test new products.

► **Annual report.** This includes simplification and imaginative presentation.

► **Other publications.** There is scope for converting company statements into newsletters, digest booklets and shareholders' magazines. These and leaflets and folders can interpret company policies and proposed changes. Reprints of speeches and articles by company officials can also be sent to shareholders.

► **Financial and educational advertising.**

► **Annual general meeting.** This heading includes selecting a venue for the meeting; organizing the programme and extra features such as films; preparing answers to possible questions; serving refreshments; and afterwards, sending printed minutes to shareholders unable to attend.

► **Regional shareholder meetings.** These should be organized from time to time in those cities where substantial numbers of shareholders live. They may be supported with films, slides and exhibits.

► **Other services.** The vice-president can arrange visits to the company's factories, send samples of new products to shareholders, and help them to locate the nearest source of supply for the company's products.

The nearest equivalent in this



These Bowater shareholders are on their way to visit a tissue mill. "Cor, they look just like us," commented employees, proving that there are two sides to shareholder relations

country to a vice-president for shareholder relations is probably the shareholder and public relations counsel of Camp Bird Industries Ltd. Camp Bird believe as a matter of policy in maintaining contact with shareholders. Their counsel is accessible to shareholders, answers their queries, organizes exhibitions of Camp Bird products at annual meetings, and advises on how to make the annual report simple and interesting.

Last year the company also sent out an excellent review informing shareholders of transactions and recent deals. In future this review is to be replaced by interim accounts.

Many of the larger companies use prestige and institutional advertising in the national press. They consider that this medium informs many shareholders of their activities, and feel that to be sufficient.

The Bowater Paper Corporation are an exception. They believe in establishing direct contact with their shareholders to supplement prestige advertising.

Interim financial statements, shareholder publications, magazine-cum-annual accounts, factory visits—all are used to put into practice the chairman's conviction that shareholders should be told everything

there is to know about their company.

Interim consolidated financial statements, for instance, give figures in dollars and sterling, and include comparative figures for previous years, together with brief explanatory notes, and a short chairman's statement.

The Bowater Papers is a magazine produced occasionally, containing articles by distinguished authors on the paper industry and other subjects. It is printed on a variety of papers, so that investors can see examples of what the corporation produce.

The annual accounts are contained in another publication which attempts each year to tell the story of one aspect of the paper industry—such as forestry or pulp production—and this is sent out to every shareholder and followed by a very full chairman's report in a 24-page booklet.

Since 1954 Bowater have arranged for shareholders who attend the annual meeting to tour one of the company's factories. Last year over 2,000 were taken round the Northfleet plant. Two motor vessels were chartered to carry the guests from Tower Pier to Northfleet. During the trip a snack lunch was served—packed in Bowater cartons. The visit

—a tour of a tissue mill and other plant—was preceded by the annual meeting which was held in a marquee on the vehicle park on the transport centre.

Factory visits can do more than just impress shareholders. They can also show the company's employees who are the people who own the company. One Bowater employee, it is said, took stock of a touring party of shareholders and muttered, "Cor, they look just like us!"

The Peninsular and Oriental Steam Navigation Company organize shareholders' luncheons three times a year. The luncheon is held aboard one of the company's liners. Guests can choose their ship and where they will sit. They hear an address from the chairman and are handed general information about the company. It is a goodwill gesture that does much to personalize the company for P. & O. stockholders.

British Petroleum Company Ltd. believe in showing their shareholders films they have made. On one occasion they hired five London cinemas, and 12,000 people saw such films as 'The New Explorer' and 'We Found A Valley,' which depict the prospecting work done by the company. But film shows are not an annual event.



INDUSTRIES 11/6

Simple but effective, this variation on the cake-sharing gimmick was used by Camp Bird to tell shareholders about the group's investment policy



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B.P. shareholders also received a booklet recently, illustrating the many activities of the company.

Edwards High Vacuum Ltd., of Crawley, have also organized film shows for shareholders, though again, this is not a regular feature.

Several firms circularize shareholders with useful general literature. Metal Industries Ltd., for instance, send all new shareholders a letter from the chairman, together with a simple break-down of how each pound earned in the last year was spent. In addition the company send out a booklet entitled 'Who We Are, What We Do' which gives a brief history of each company within the Metal Industries Group.

Obviously, the keystone to shareholder relations is the annual report and accounts that a company must present to the annual general meeting. More and more companies are beginning to realize that it is not enough to present a formal account, even if it does conform to good accountancy standards. The simple truth is that most shareholders cannot read a balance sheet very well. So progressive companies make use of charts, graphs and illustrations to put their story across clearly and entertainingly.

Each year *The Accountant* holds a

competition for the best report and accounts of public companies. In a prize-winning entry by United Steel for 1957, the company detailed the profits made and how these had been allocated, commenting briefly on reserves, assets, directors, etc.

Increased production is illustrated by a chart which compares output for three years. For greater clarity, the employment of the company's capital and the disposal of the excess of income over expenditure and depreciation is shown in a *single* column of figures, and notes and schedules provide additional details. Another simplified form of accounts was discussed in the April issue of *BUSINESS* (page 92).

Concern for better shareholder relations is leading several companies to issue half-yearly and even quarterly reports. These interim reports, which usually accompany an interim dividend, provide shareholders with additional information, and enable them to check how trading forecasts made at an annual general meeting are working out. Over 100 companies issue half-yearly accounts, but barely a dozen have adopted quarterly reports. Notable among these are the Royal Dutch Shell Group and Arthur Berton Ltd.

For many companies there are serious objections to publishing quarterly accounts. The most common argument is that these may give a distorted picture of what the final position will be. One company, Aspro-Nicholas Ltd., are actually discontinuing quarterly reports, probably for this reason.

The form of interim information can vary widely from firm to firm. Arthur Berton's half-yearly information, for example, is a directors' report which comments briefly on partnership agreements, interim dividends, and half-yearly trading results, though without giving figures. In other cases more details are made available.

Shareholder relations may well seem an expensive activity. Most of the firms quoted are 'giants,' seemingly with unlimited resources. But experience shows that where a large firm pioneers, smaller ones can well afford to follow. Pension schemes, employee shareholding, work study and employee catering are a few prominent examples.

There seems every reason to think that shareholder relations may also bring very real gains in the long run.

END

We Scrapped and Gained-

by D. Clarke

THIS is not the study of a company who were forced to change their methods of payment because they found that bonus schemes were unworkable. Rather it is the story of a firm who, having made full use of incentive bonuses to raise the tempo of production, decided to take another step forward and try to remove the incidental frictions and frustrations which bonus schemes can cause, relying on good management and improved labour relations to maintain the increased tempo.

It had always been the policy at Mars Ltd., to introduce and maintain, wherever possible, incentive bonus schemes within the production division. Even as early as 1933 all personnel directly engaged in processing or packaging were being paid on incentive bonus systems.

Although these systems were tailored to fit the individual needs of each department, they were based

on the same general principle: the time taken to complete an operation or cycle was compared with a time-studied standard and the saving credited to the operator at the hourly rate.

A critical survey of methods of payment within the company in 1953 showed that nearly 75 per cent of the labour force were being paid on bonus schemes where external influences could affect their earnings to a much greater degree than their own efforts.

A high degree of mechanization had completely changed the work content of every job in the primary production departments. The physical work content had been reduced to a minimum and any additional effort on the part of the worker had little effect on the tempo of the department. Their speed was controlled by the process.

In departments where production a

Incentives

➔ stronger supervision

➔ lower labour turnover

➔ better employee relations



ABOUT THE AUTHOR

36-year-old Mr. Clarke has been factory manager in charge of sugar products at Mars Ltd., Slough, since 1954. He has been with the company for nine years, and attended the Administrative Staff College, Henley, in 1955.

This article is based on a paper which he read at a recent one-day conference on financial incentives, organized by the Industrial Welfare Society in London.

continuous flow system were packed, the nature of the product precluded double handling. Sufficient machines, therefore, had to be manned on each wrapping belt to cope with normal variations in output. Thus the position of the operator on the belt was of paramount importance, the machine furthest from the production end having, as one would expect, the lowest utilization and its operator the least chance of earning maximum bonus.

To maintain equity, the positions of the operator on the belt were changed daily. Other influences outside the operator's control—machine breakdown and failures in supply—all helped to reduce the effect of an operator's effort on his bonus. (Nevertheless, the good operator could and did earn more than the indifferent one.)

On top of this there was that shadow which hangs over most bonus

systems, especially those which are machine-paced. The fact is that bonus earnings often vary in an inverse ratio to the effort expended. A lot more effort is required to salvage a little bonus when things are going badly than is needed to gain maximum bonus when all is well. Certainly from the point of view of those operators just discussed there was little to lose by going on to a high day rate.

But what could the company hope to achieve from the change?

1—An improvement in management relations with labour. Whatever doubts higher management might have had about their subordinates' ability to maintain productivity without incentives, these were not shared by shop floor management. The latter were willing, indeed eager to accept the challenge. They felt that too much of their job was being done

by bonus schemes, and that time spent on settling petty bonus squabbles could be put to better use.

2—A more stable labour force. Although labour turnover was reasonable compared with national and district averages, it was still higher than might have been expected considering the high level of pay, the conditions of work and the social benefits offered. From May, 1948, every person in the company's employ was a member of a non-contributory social security scheme embracing pensions, sickness benefit, life assurance and disability.

Replacement of labour is always an expensive business, and in 1953 the cost was estimated at £125 for every person replaced. In addition, labour was at a premium in the district and suitable replacements were difficult to obtain.

An analysis of reasons for leaving

A lot more effort is required to salvage a little bonus when things are going badly than is needed to gain maximum bonus when all is well

showed that, although discontent with wages or conditions was seldom the prime cause, nevertheless discontent with bonus was frequently expressed during the exit interview.

3—It was hoped to build a more flexible labour force. In a company where there is a degree of seasonal influence on sales, there have to be transfers of personnel from one section to another. These transfers caused difficulties. As well as the natural dislike of being uprooted, there was an even chance that bonus earnings would be lower. Although payment of an average bonus was guaranteed for a period of a few weeks, the dual effect of displacement with the prospect of the possible eventual loss in earnings proved too much for some people. Every time there was redeployment of labour there were casualties.

4—Improvement in quality. Whenever a bonus scheme to increase output is introduced, management must consider very seriously the likely effects on quality. Removal of temptation to earn more by sending out sub-standard work will not necessarily improve quality, but it will certainly make it easier to maintain quality standards.

Weighing the expected increase in labour cost on the one hand against the advantages we hoped to gain on the other, the company decided to go ahead on an experimental basis.

We chose a department where bonus was not completely outside the influence of the employee's individual effort, and proposed that all members of the department should be paid the same bonus—a bonus based on the average for the department over the previous month.

It was made quite clear to the operators that, while we did not

expect those below average to slip back further, at the same time, in all fairness, we would not expect the good operators to maintain their previous high tempo. Operators who worked at the tempo which would normally earn them bonus at this new average rate would be doing a fair day's work. It was proposed to guarantee them a fair day's wage. We were prepared to bolster output by introducing more labour if necessary.

This is what happened.

Sub-average operators continued to plod along, but good operators also continued to maintain their previous tempo.

This exceeded our most wildly optimistic dreams. The pessimists declared that the only reason that tempo was being maintained was because of the interest being shown in the experiment. As soon as the spotlight was off output would slacken. Time showed them to be wrong.

Gradually similar schemes were extended to other sections. The same pattern resulted.

Meanwhile transfers had taken place between departments. The effect on operators was closely studied. After discounting the initial period when the transferee was settling down and learning the new job, it was apparent that the vast majority of operators continued to work at something near their old tempo. In fact this was so apparent that, if after a reasonable time the transferee had not reached that old tempo, management began to seek a reason:—Was the operator physically unsuited to the new job?

—Was there an innate dislike of the new job?

—Had the transfer been carried out in such a manner to cause resentment?

Generally an answer could be found.

Equally interesting was the behaviour of new employees. After an initial period during which they settled down, they too began to work at their own tempo. Some were below the department average, others were above. But they reached the required level without an incentive carrot, merely from the example of their workmates and the demands of management.

By the end of 1953, 75 per cent of the operators directly concerned with production were on the new 'lieu' bonus. The machinery of incentive bonus was still in existence, ready to be brought back if tempo dropped below a satisfactory level. But early in 1954 the company acknowledged the success of the experiment by incorporating the 'lieu' bonus into the hourly rate of all male process operators. Truly they were now on a high day rate.

The company were not prepared as yet to consolidate the bonus of those engaged on packing. About 40 per cent of them were still on incentive bonus—an incentive bonus based on individual output where the operator had a higher degree of control over output. This bonus had a much more direct effect on earnings than elsewhere in the firm. There was a bigger differential between the earnings of the good and the not so good. There were also wider fluctuations between the same operator's daily earnings. It was felt that to reduce the good operator's earnings to the factory average at this time would cause unrest.

But this was an unsatisfactory state of affairs and one which could not be allowed to continue indefinitely. There was an increasing reluctance on the part of even good operators to transfer from a 'lieu' bonus system



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I believe in the use of financial incentives . . . for bringing a labour force up to the required pitch. But when you use bonus schemes to maintain that pitch they start to have a negative value

to one where they would be paid by results, *despite the fact that they could undoubtedly increase their earnings.* They preferred a stable wage. A probable increase in pay could not compensate them for their uprooting. This encouraged us to look again at the situation.

To obtain the maximum effect from individual incentives it had always been the practice to credit bonus on a daily basis. But when this bonus was calculated weekly, there was little real difference between the average and the factory 'lieu' bonus. In fact only a small percentage of workers consistently earned an appreciable amount above the average.

The keynote in the transition from incentive to day rate had been gradualism, and it had so far taken two years. We could afford to wait for the right moment.

Early in 1956, nearly all the high bonus earners had been concentrated in one department. This department was now in the throes of an intensive mechanization scheme. Re-evaluation of the jobs involved showed that the basic rate would go up, but at the same time the chances of earning high bonus would be reduced. These factors, helped by a general wage increase, meant that all operators could be put on a 'lieu' bonus without loss in take-home pay.

The change was made. It is perhaps significant that not one person left the company because of the switch from incentives to day work rates. High bonus earners continued to work at their old tempo. Newcomers were brought in and found their own levels, levels which were considered satisfactory by the company. Indeed, some of the best packers in the company have never had any experience of bonuses.

Early this year we took the final step. The word 'bonus' was removed from the clock card and the factory 'lieu' bonus was consolidated into the hourly rate.

What did we gain or lose?

► **Labour relations have improved.** When extra demands are put on labour there is a much more ready response. The first consideration is no longer "What's in it for me?"

► **Management has more time to manage.** They now have to obtain results through people and not through their pay packets.

► **Labour turnover has dropped 30 per cent** from what it was five years ago. This represents a considerable cash saving, apart from any other consideration.

► **There is a more flexible labour force.** But interdepartmental transfers are kept to a minimum. There is still a marked resistance to change, but at least there are no longer complications of bonus differences to contend with as well.

► **There is a different attitude to quality** on the part of operators. They no longer tend to regard quality as a restrictive practice by employers to prevent them from earning the maximum bonus. They are more quality conscious—they can afford to be.

► **Operator speeds have remained stable.** Where there has been no substantial change in the work content of jobs, spot checks have shown that the average tempo in the department is very nearly the same as it was when financial incentives were being applied.

What lessons have we learnt?

While operators had the chance of

earning high wages, we found that they would go to any lengths to earn an extra shilling. *When the carrot was removed we found that individual operators were willing to work just as hard, sometimes even for less money, as long as that money was guaranteed.* They wanted wage security. They wanted to plan ahead.

We found that once the individual operator reached the required tempo and was conditioned to working at that tempo, she would maintain it on any similar job provided that extraneous circumstances did not interfere.

The main pre-requisite of a major change such as I have described is to have confidence in junior management—it must be strong. Managers and supervisors in turn must have confidence in the targets set by higher management. These must be realistic targets, preferably based on time standards produced by a full use of method and work study.

'Negative' Value

I believe in the use of financial incentives. There is no substitute for them in bringing a labour force up to the required pitch. But when you use bonus schemes to maintain that pitch they start to have a negative value. *The constant accent on money will have an unsettling effect on the average operator.*

If I were starting up a new factory from scratch, I should use incentives to the full until I was satisfied with the tempo. Then I would replace them with a high day rate.

When would be the correct moment to make the change? In the words of our industrial engineer:

"Not when you know they have reached the right tempo. Not when they know they have reached the right tempo. But only when they know that you know that they know."

END

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They find that pre-determined time values give more consistent ratings—and a better chance to improve methods

How a Small Firm Use Synthetic Time Standards

by Peter Spooner

PRE-DETERMINED motion time systems — P.M.T.S. for short—are more often written about than actually used. The idea behind them is simple, but in practice they entail a lot of detail work and there are no short cuts.

Briefly they work like this:

►The operative's task is broken down into a series of basic movements—reach, grasp, turn, apply pressure, position, release, etc. These are finely sub-divided to allow for the condi-

tions under which the movement is made.

►Each basic movement or micro-element has a pre-determined standard time. By adding these together, the work study engineer 'synthesizes' a time for all standard elements of an operation, and the stopwatch is used only for the exceptions. (Pouring out a cup of tea is a very simple example. One can measure by P.M.T.S. the time to grasp and move the teapot to the cup. But how long

does it take to fill the cup? Filling would be time-studied on conventional lines for each size of cup, and a standard element determined.)

Clearly there may be some difficulty in persuading operatives that work measurement by men who sometimes do not see the work is both dependable and fair. For this (and other) reasons, P.M.T.S. is frequently a backroom technique, used for such purposes as production planning, cost estimating and tool design. At the same time, its appeal

► **When a job is broken down into micro-elements, the method is automatically brought under close scrutiny. Unnecessary or inefficient movements are spotlighted**

► **The consistency of M.T.S. ratings has appealed to operatives and helped to prevent the friction which so often arises when new work measurement techniques are introduced**

is generally restricted to the large firms where work study is taken very seriously.

There is, however, one known exception. English Numbering Machines Ltd., Enfield, Middlesex, score a double because (a) they are a relatively small firm with 350 employees and (b) they are using a P.M.T.S. system to set incentive standards of performance.

As a workshop technique, P.M.T.S. is gradually superseding ordinary time study practice. Practical experience over the past year has convinced English Numbering Machines that it offers three major advantages:

1—Speed. Once repetitive standard elements have been built up, establishing a P.M.T.S. standard is much faster than having to time-study the operation in the ordinary way. Moreover, the time taken to provide standard data and to complete a P.M.T.S. study is amply repaid when changes of method occur, because the obsolete micro-elements can be easily extracted and replaced by a new motion pattern.

2—Consistency. The company have three work study engineers. Each is liable to apply slightly different criteria when using conventional methods of rating. But P.M.T.S. applies the same standards every time, so the results are not influenced (be it unconsciously) by individual bias. (This statement is borne out in fact. The company investigated a particular process in which a number of components have the same operation applied to them, the difference in the components being slight variations in their location on a special-purpose

machine. With conventional time studies, the range of times for the different types varied from 33 to 50 mins. per 100. Since the advent of P.M.T.S., the range is 29 to 34 mins. per 100.)

3—Automatic Method Analysis. When a job is broken down into micro-elements, the method is automatically brought under close scrutiny. Unnecessary or inefficient movements are spotlighted. Thus the company have more chances to avoid the not uncommon fault of putting an incentive rate on a bad method.

It is the second advantage—consistency—which has appealed to operatives and which has helped to prevent the friction which so often occurs when new work measurement techniques are introduced. In the company's experience the main cause of rate-fixing dissatisfaction is not the time standard itself, but a feeling that other employees have had more luck with the standards set for *their* jobs.

English Numbering Machines were founded in 1937. For some time they were concerned wholly with the products mentioned in their title. Now, however, they also manufacture counting devices for industrial uses, and these constitute the biggest part of their production.

E.N.M. counters go into a wide variety of products. Basically there is a range of five standard types, but in practice many non-standard modifications are needed to suit different applications.

Often an order is placed while the customer's product is in prototype

form. Later his product—and his order—may change. This keeps the company's planning department on its toes.

P.M.T.S. was first introduced on limited scale about 15 months ago. During a two-year period of planning and preparation an exhaustive investigation was made into all published systems. The company eventually extracted the best and most suitable characteristics of these systems to suit their own requirements, and set up a system now known to them as "Methods - Time - Standards," or M.T.S.

Ultimately this will replace, to a large extent, the older system of time study. But the company have decided to make the change gradually.

It would be a serious mistake, they feel, if they were to break the traditional undertaking not to adjust existing rates unless there is some change in methods. For this reason M.T.S. is now being applied only to new jobs which would have to be rated anyway.

Even so, the variety of the company's work means that there are plenty of opportunities to use M.T.S. In one month recently, the methods department was asked to rate nearly 200 operations. Not all of these got M.T.S. treatment: at this stage the new system is applied only to processes of a consistent nature which involve long runs.

At the start, English Numbering Machines adopted the 18 basic movements laid down by Gilbreth, the pioneer of motion study, as a basis for their investigations. In the light of experience, they left out some of these and invented others, so as to



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provide more selective pre-determined time values for their own work. They did not automatically accept the validity of published micro-element values; every basic element was put to the test until the company were completely satisfied that it was consistent and correct.

Conventional time study and M.T.S. are not directly comparable. M.T.S. is much more critical: there may be as many as 50 micro-elements in one conventional time study element. Nevertheless, it is useful to compare past performance time study records with the results obtained from standards compiled synthetically from micro-element data.

English Numbering Machines did this during the setting-up period. Before applying the first M.T.S. values, bonus gains on over 6,000 time-studied production hours on a wide range of activities were compared with the gains that would have resulted had M.T.S. been used.

How the System Works

Normally the rate-fixing procedure follows this sequence:

▶Details of a new job are received by the production engineers and tool designers, and a draft process layout is prepared.

▶Work study engineers calculate estimated times for all processes, mainly as a guide for production planning. These estimates are based on available data—and here the company's Brisch classification system, which automatically groups all generically similar parts, is of great help.

▶The layout is then returned to the production engineers, who provide a copy for production control.

▶As soon as a job gets on to the shop floor and the first parts have been approved by inspection, the work study department is asked to determine a standard time.

This was formerly the point at which time study engineers brought out their stopwatches. With M.T.S., however, most of the work is done inside the work study department. Indeed, standard time calculations

can start as soon as a process layout is approved and the final production details are decided (including, of course, the types of machine on which the work is to be performed).

The first step in the M.T.S. procedure is to reduce every operation to its basic motion pattern. Take, for example, a straightforward drilling job. The operative's basic motions will include: reach, grasp, move, position, and release. Each has to be examined with reference to (a) the size, weight, and shape of the part, and (b) the conditions under which it is to be handled.

To start with, there are various classifications of reach and move. Which of them is appropriate depends on the answers to such questions as:

—Does the operative have to use his eyes or can he automatically locate the part for which he is reaching?

—Is it a single object whose general location is known, or does the location vary from cycle to cycle?

—Has it to be picked out of a group of dissimilar objects?

When the basic type of reach or move is established, other factors are applied. What is the length of the movement? Does the operative's hand start from a position of rest? Ultimately a complete description of the movements is built up. Then the period of time which should be allowed for it is computed from tables of basic data.

All basic motions are analysed and assessed in the same way. For example, the time allowance for 'position' will depend on such factors as the shape of the part and the ease with which it is positioned into the jig or fixture.

Working from his predetermined standards, the work study engineer makes a full analysis of the operation on a basic data sheet. Each micro-element is expressed in decimal minutes. Machining times are recorded either by calculations of speeds and feeds or by stopwatch, while occasional elements which are not based on standard elements are also recorded, together with the frequency of their occurrence. Finally, all individual allowances are added together,

the total being the normalized time for the task. To this the usual rest allowance is added.

Most of the information on which M.T.S. calculations are based is obtained from the process layout and working drawings of the component concerned. In addition, work study engineers have a 'travel' chart for each machine in the factory. This gives exact distances of all movements which an operative is liable to make, and thus saves the time and trouble of taking on-the-spot measurements.

The procedure is streamlined still further by using 'standard practice' charts which list micro-elements most commonly encountered and provide reference to other standard M.T.S. data.

Does the introduction of M.T.S. mean that the work study engineers will gradually lose touch with the people on the shop floor? English Numbering Machines say no.

In the first place, the work study engineers provide a methods/operative training sheet, which shows in clearly defined steps, without technical jargon, how each job should be performed. Furthermore, the determination of M.T.S. operative performance standards is continually supplemented by direct observations. Often it is better to go and measure a motion pattern *in situ* than to refer to standard practice charts. And assembly operations always have to be studied 'live,' since it is impossible to build up a micro-element motion pattern from process chart information alone.

The new system is changing the whole pattern of departmental activities. As M.T.S. records are built up, the work study engineers have more and more time for real method study. This is bringing them into even closer contact with production engineers and operatives.

It is largely because the staff have gained confidence in the work study performance that M.T.S. has encountered no opposition. Great pains have been taken to explain how it works, both to supervisors and to operatives, who appreciate its fairness and consistency.

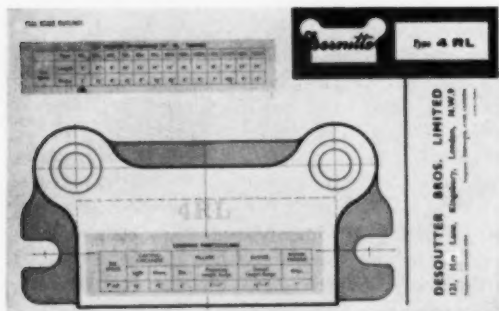
END

MANAGEMENT AT WORK

IDEAS AND ACTIONS OF PROGRESSIVE FIRMS

Sales promotion idea cuts drawing office time

PRESS tool set division of **Desoutter Bros. Ltd.**, London, are circularizing jig and tool drawing offices with a series of printed full-scale outline drawings of their most commonly used standardized die sets. Each drawing



also gives leading specification details and other useful information.

Draughtsmen who want to save themselves time can either trace off the drawings and draught their press tool design within that shape, or place semi-finished drawings over the most suitable die set shape.

Desoutter report that **Ferguson, Remington Rand** and **Standard Telephones** are among the firms who have already expressed satisfaction with the idea.

Have you heard this story before?

WHILE depression fears tightened their hold on U.S. industry earlier this year, **Quaker State Metals Co.** bought advertising space in business papers to tell this story—a classic of the last great depression:

"A man lived by the side of the road and sold hot dogs. He was hard of hearing, so he had no radio. He had trouble with his eyes, so he had no newspaper. But he sold good hot dogs.

"He put up a sign on the highway, telling how good they were. He stood by the side of the road and cried:

'Buy a hot dog, mister.' And people bought.

"He increased his meat and bun orders and bought a bigger stove to take care of his trade. He got his son home from college to help him. But then something happened.

"His son said: 'Father, haven't you been listening to the radio? There's a big depression on. The international situation is terrible and the domestic situation is even worse.'

"Whereupon the father thought: 'Well, my son has been to college. He listens to the radio and reads the papers, so he ought to know.' So the father cut down the bun order, took down his advertising signs, and no longer bothered to stand on the highway to sell his hot dogs.

"His hot dog sales fell almost overnight. 'You were right, son,' the father said to the boy. 'We are certainly in the middle of a great depression.'

Dyeline printer speeds their mechanical accounting

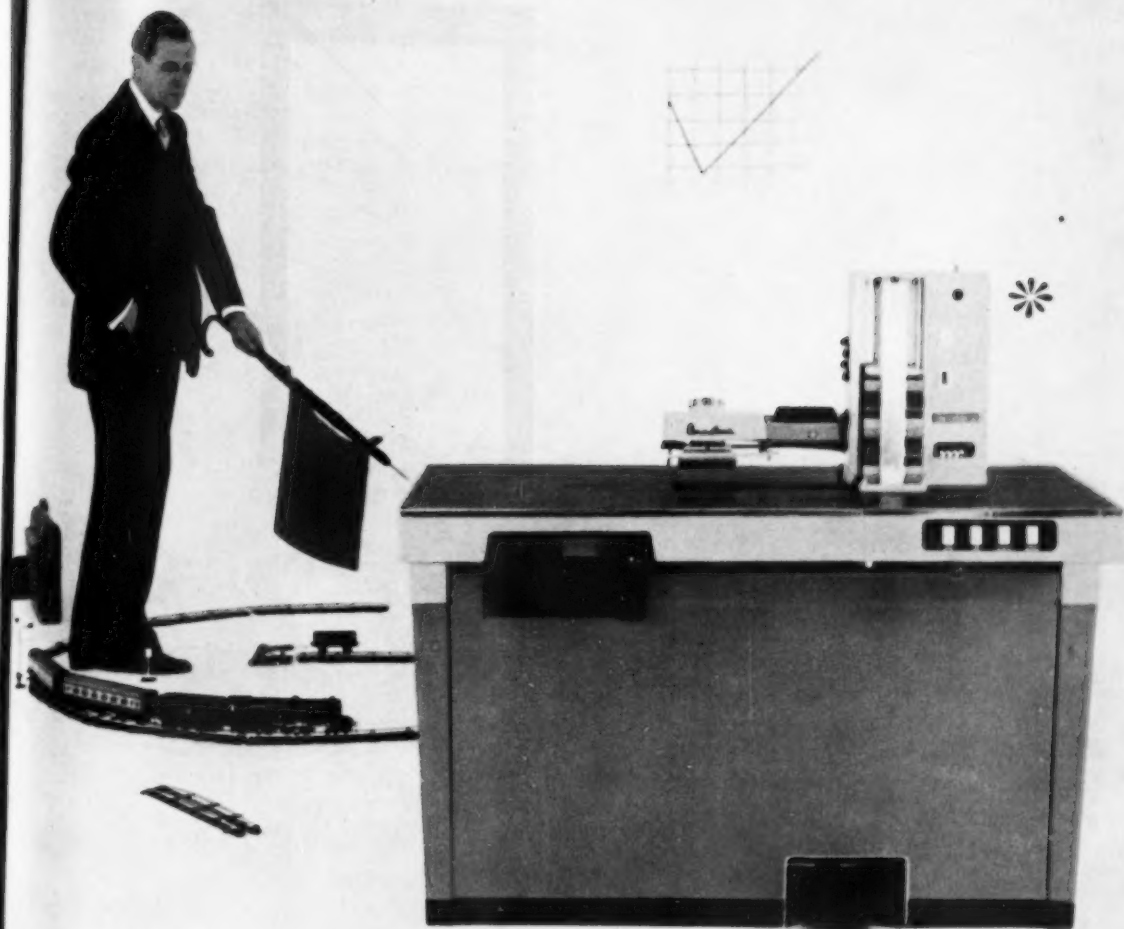
SALES order processing has been brought up-to-date at the new head office of **Smedley's Ltd.**, Whyteleafe. By linking a punched card installation to a new dyeline printer, quite a small department can now cope with up to 1,000 individual orders a day.

Orders come in mainly from the firm's representatives. They are translated into punched cards and



tabulated. This produces a translucent photocopying master and three carbon copies automatically. The tabulation is in the form of a finished invoice, quoting

BUSINESS



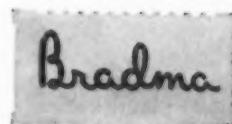
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☐ RATING

MANAGEMENT AT WORK

quantities, sizes, varieties, order and customer numbers, and so on. But of course the same basic document can also serve as stock release and dispatch instruction.

Next, the tabulated set is routed to an addressing machine which prints delivery address and account number.

Two carbons now go off to whichever Smedley factory is to supply the goods. When the order has been filled, one carbon is returned to head office as a completed dispatch note. This is then compared to the translucent master, and any variations or adjustments are entered on the latter.

The master can now be fed into the dyeline printer to produce as many invoice copies as are needed, at speeds of up to 1,200 copies an hour. Typing errors and invoice delays are cut out, and it is no trouble to meet special customer requirements for extra invoice copies.

Internal courses teach faster reading

SINCE October 1953, **Joseph Lucas Ltd.**, Birmingham, have been holding quicker reading courses for groups including directors, laboratory assistants, postgraduate apprentices and managerial executives. Reporting on results in a recent *BACIE Journal*, the firm's education officer gives the following facts:

Average reading speed of seven groups at the outset of their course was 164 words per minute. The average final score was 346—more than double. But the comprehension rate remained stable. Material read was even understood a fraction better by five of the seven groups at the faster speed, and only dropped significantly (by 1.4 points out of 10) in one group.

The Lucas course uses material produced by Harvard University. Basically it consists of reading 14 passages against the clock and seeing 16 short films.

Follow-up sessions are held after a month or two. It has been found that they help consolidate the marked improvement shown by groups during the course.

How professional firms mechanize the office

ON page 109 of this issue is a description of how a £500 accounting set-up is being used by a 250-employee firm. But a number of small professional offices are also finding this equipment extremely worthwhile.

Firm One (professionally anonymous) are solicitors, and have about 5,000 accounts. They have to account for fees and expenses for work done by a double-entry

book-keeping system. Until recently, about a dozen different ledgers were kept, some 1,500 postings were done manually every week, and a large sum was spent each year on auditing fees.

Instead of taking on extra clerical labour which was becoming urgent, they now have an adding machine/typewriter hook-up, and expect to recover the whole cost from lower audit fees and labour savings within a year.

Firm Two are chartered patent agents with some 500 current accounts. Before, there were ledgers galore to record work done, charges made and customer accounts. Quarterly statements were sent out, but even with considerable pre-typing this took anything up to 15 days, and disrupted office working.

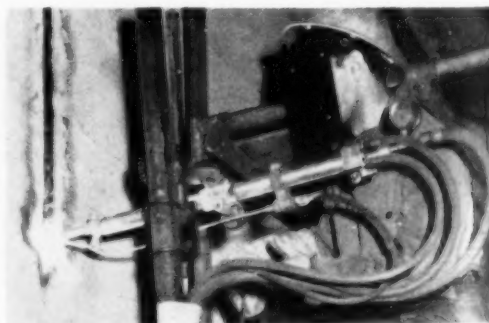
Now, with the mechanized set-up, all the current accounts are filed in one small posting tray. Account card and statement are simultaneously filled in. At the end of a quarter, all the statements can be sent out in only two days.

"Where would you get such an efficient book-keeping clerk for £500?" they ask.

This new U.S. process cuts concrete like cheese

POWDER-CUTTING is the name of a new technique for cutting concrete. It has been developed in the U.S. by **Linde Co.**, a division of **Union Carbide Corp.**

The process (reported in the February issue of



Factory) consists of feeding a mixture of iron and aluminium powder into a hot oxy-acetylene flame. The rapidly burning powder raises the temperature of the flame and 'washes' away the concrete.

The technique is proving especially useful in remodeling existing buildings. It is fast and accurate, and requires only lightweight and relatively inexpensive equipment. Main snags are the smoke produced through oxidation of iron and the hot slag produced by the cutting action. But both can be overcome.

One striking feature of powder-cutting is that steel reinforcing actually speeds the cutting process instead of hindering it.



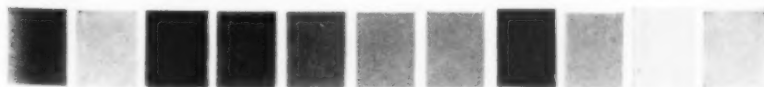
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Rofoten MODULAR Partitioning is made in 13 standard colours—with which you can ring the changes in almost any way you wish. For instance, you may elect to have your blue walls featured with cream strips between the partitioning units, or perhaps to set off your green wall with white skirting. Alternatively, you might like walls or doors in contrasting colours—all this is quite easy to arrange *at no extra cost*.

And that's not all: suppose you get tired of your grey door. You can swap it with Mr. Smith's red

one in half an hour. Or if you want to give your office a new look, it is an even simpler matter to get together with Mr. Robinson for the exchange of differently coloured skirting and pilasters.

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BUSINESS BOOKSHELF

THE DIRECTOR LOOKS AT HIS JOB by C. C. Brown and E. E. Smith (Oxford University Press) 22s. net, 23s. post paid. There is relatively little good literature on the problems of a board of directors, how the board should be constituted and the nature of a director's duties. This book makes a useful contribution to the small available supply. It arises from three four-hour symposiums held in the early summer of 1956 at Columbia University, and attended by leading executives of such famous American corporations as du Pont, Standard Oil of New Jersey and General Foods. Chapters include 'Functions of the Board,' 'Inside v. Outside Directors' and 'Full-time v. Part-time Directors.' An edited synopsis of part of the book was published in the October 1957 issue of *BUSINESS* under the title 'Choosing the Ideal Board' (page 152).

A fundamental problem which the book raises but does not solve is how to have a chairman who is willing to let the chief executive operate without continual interference, and yet strong enough to maintain his independence and his ability to play a decisive role in board changes, when these are necessary? The traditional founder and majority shareholder can do this, but his successor as chairman of a public company may have very little personal voting power. He may have to rely on support from an influential contingent of hand-picked outside directors.

COMMON SENSE ABOUT THE COMMON MARKET by E. Strauss (Allen and Unwin) 15s. net, 15s. 9d. post paid. A study, partly historical, of the development of the European Common Market and the proposed Free Trade Area, both of which are viewed with some disfavour by the author, mainly because he foresees Germany becoming the dominant partner. However, his alternative proposals of an extension of mutual tariff preferences between the countries of the Commonwealth and those of Western Europe which are at present outside the Common Market, seems unlikely to win much support. It lacks the all-embracing appeal of the Common Market, which covers much more than tariff adjustment. In forecasting that Germany will dominate the Common Market, the author has failed to appreciate that Germany, in the economic sense, will largely cease to exist when the Common Market becomes firmly established. Only Western Europe will exist, and inside it there will be German,

French, Italian and other firms competing. Judging by some of the outstanding successes of the Dutch, French and Italians recently, German firms will by no means have it all their own way.

BUSINESS PRINCIPLES, ORGANIZATION, AND MANAGEMENT by Tonne, Simon and McGill (McGraw-Hill) 30s. net, 31s. 9d. post paid. An American textbook for beginners in business studies. The authors are prominent in the field of business education, and they have experimented with a new method of teaching. The book begins by posing the case of Fred Kennedy, a young man of 29 with ten years' experience as a retail assistant, who decides to go into business on his own. Each chapter begins with a particular problem which Fred Kennedy in person has to face, and this problem is used to draw the reader's interest towards the subject-matter of the chapter.

A MANUAL OF TIME AND MOTION STUDY by John W. Hendry (Pitman) 21s. net, 22s. post paid. Fifth edition of a well-known, standard text which describes how to raise efficiency in two directions: first, by giving an incentive to workers to do their best; and second, by avoidance of all preventable waste.

HOW TO WIN CUSTOMERS by Heinz M. Goldman (Staples) 25s. net, 26s. 6d. post paid. This book is absolutely

packed with useful advice on the art of selling—on the development of a successful line of sales talk, on how to get an interview, how to open the talk, clinch the deal, and so on. The principles and suggestions are based on the author's experience of selling and instructing more than 45,000 salesmen. This is an improved and expanded version of his earlier work, "The Art of Salesmanship."

THE INFLUENCE OF SALES TAXES ON PRODUCTIVITY (European Productivity Agency) 18s. net, 19s. post paid. A comparative study of European sales taxes.

QUEUES, INVENTORIES AND MAINTENANCE by P. M. Morse (Chapman and Hall) 52s. net, 53s. 6d. post paid. This is a most important work for all concerned with the mathematical problems of operations research. Written by the professor of physics at Massachusetts Institute of Technology, it not only sets out the higher mathematical equations for solving a number of problems concerning optimum supply and loading arrangements, stocks and maintenance schedules, but it also contains tables of figures for key mathematical functions, calculated on a digital computer.

SELF-SELECTION by Claude R. Lyon (Camford Press) 42s. net, 44s. post paid. The author's experience of re-equipping stores and shops has enabled him to illustrate important display points in the captions of 50 photos taken in 30 different types of department.

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Even small firms find that they can profitably use an accounting machine for the payroll, especially when it also handles other jobs

Shortcuts For the Payroll

George T. Rae

THE making up of the payroll is one of the most time-consuming jobs in any factory or office. Even a small reduction in the time and effort required for the operation is worthwhile because of the cumulative effect over the year.

There are several ready-made solutions. All involve buying or renting equipment costing from a few pounds to several thousand. But apart from these, every wages office can develop its own time-saving methods.

For these there is no golden rule, because of the endless differences in type of work, method of payment, and work force. What is a short-cut for some, may for others waste time.

Each office must work out its own solution. A short, step-by-step study of methods and operations, from the computation of gross wages to their distribution to employees is likely to throw up some time-saving ideas.

This article lists first the sort of equipment which can be bought to speed up the payroll in the small or medium-sized firm, and then goes on to describe some of the many shortcuts which firms have worked out for themselves. Even if an innovation lengthens the time taken to make up the payroll it can be an overall time-saver if, for instance, it clears up doubts in the minds of employees who would otherwise queue up at the

pay office with queries or complaints.

The law requires that insurance contributions be deducted regularly and that the employee's income-tax position be up-to-date. For each employee there must be filed a card showing his code number and tax deductions to date for the current fiscal year. The employee wants to know his gross pay, the various deductions like tax, insurance, savings, and so on, and the net figure. Provided these requirements are met it does not matter how unconventional the system is.

There are generally three documents to be prepared for each pay-

Continued on page 105

BUSINESS

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| TABLE A PRE PAY WEEK 9 (JUNE 1 TO 7) | | | | | | | | | | TABLE B TAX DUE ON TAXABLE PAY | | | | | | | | | |
|--------------------------------------|---------|------|---------|------|---------|------|---------|------|---------|--------------------------------|---------|------|---------|------|---------|------|---------|------|---------|
| Code | Payable | Code | Payable | Code | Payable | Code | Payable | Code | Payable | Code | Payable | Code | Payable | Code | Payable | Code | Payable | Code | Payable |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
| 1 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |

Simplified tax tables, with amounts arranged in steps of 5s. or more, can be used where the payroll is rounded off. They speed up tax calculations because they are easier to read

day—the individual record cards, the individual pay-slips to be given with the cash to each employee, and the payroll summarizing all wages paid out.

1. Handwritten Systems

The normal method, where only a small number of employees is involved, is to prepare the three documents separately, by hand, using an ordinary ledger posting system. There is a separate ledger sheet for each employee.

Proprietary, three-part handwritten systems cut the time required to about half. Record card, payroll, and payslip are completed at one writing. The device is simple, consisting of a pegboard varying in size from about a foot to a yard square. At one side is a clamp and pegs. Special stationery is used. The application of a new, simplified system was described in the September, 1957, issue of *BUSINESS*. With another version (there are several on the market) the clerk releases the clamp, inserts payslips up to a total of 150. Then the payroll and carbon paper are clamped on top.

The clerk takes the first employee card from the file, places it in a special holder which is positioned according to the tax week number. An entry made on the card is automatically duplicated on the payroll and wages slip.

Pressing a lever does two things: releases the card, which is returned to the file, and moves the payroll up the line. The next card is placed in the holder, and so on. By the time the bottom is reached the top of the

payroll has moved up and away from the clerk. She never has to alter her position; there are no awkward places like the bottom line to slow her up. Even large companies with mechanized systems and punched card installations use these systems for the confidential salaries of executives. They are generally made up by the company secretary, who may be unable or unwilling to use an accounting machine.

2. Embossed Plates

An embossed plate, like a larger version of those commonly used for addressing purposes, may be used as a 'store' for all the constants that appear against an entry in the payroll from week to week. These are employee's name, code number, works number, hourly rate, all sorts of deductions, and so on. Plates, payroll, payslip, record card and envelope are fed into a machine which selects, by means of specially shaped metal pads, the details from different parts of the plate and prints them on all of the documents, as required.

Advantages are that the clerk is not fatigued by making repetitive entries. Once the details are printed, the non-constant factors can be posted. The plates are used over and over again. Permanent or semi-permanent changes in circumstances are given effect by re-embossing the details concerned, smoothing out others, or embossing new ones. The work can be done by the user, with special equipment, or by the supplier.

3. Mechanized Payrolls

The over-riding advantage of using

an accounting machine is speed. The payroll for a firm of 1,000 employees can be completed in one day by one operator (calculation of gross wages from clock cards, etc., may, of course, take longer). During the week the machine is used for purposes like sales ledger postings, stock control and so on. Interchanging of control bars, tailored to customers' requirements, ensures that the machine prints in the right places, often simultaneously, exactly what is required.

Where necessary, gross pay for each employee is calculated by a separate section of the wages office and listed in the order in which the names appear on the payroll. The machine operator puts payroll, payslip and envelope into the machine. Then she takes the first record card from the file and enters the amounts and deductions on it. The four documents are prepared simultaneously, carrying as much detail as required. The machine makes all deductions automatically and prints the net figure. Cumulative totals are struck up so that proving of the payroll is easy.

Pay Envelopes

Writing or typing names and amounts on pay envelopes is a time-consuming and 'fussy' job. The work can be made easier by using envelopes in a continuous form in an ordinary typewriter, on the accounting machine, or in the punched card tabulator that makes up the payroll. They are perforated or creased to make them easily detachable. Often the envelope acts as the payslip as well. In this case they are sealed in such a way

that only the employee's name is visible.

Transparent envelopes or transparent windows can save time. The payslip is wrapped round the money so that only the employee's name is visible. Some firms use envelopes with transparent strips. Banknotes are inserted and folded in such a way that the employee can count them without breaking the seal. Suspected deficiencies are reported immediately to the office and the employee is not placed in the invidious position of having to prove his honesty.

Other firms use an envelope with two seals. The amount of cash inside and various deductions are typed under the first seal so that the employee can check them without having access to the cash itself.

Another way is to dispense with the payslips by printing all details of pay on the envelope. There are so many figures—hours worked, piecework, deductions, and so on, that they have to be printed on the outside of the envelope. Employees do not appear to object to the lack of secrecy.

Insurance Franking

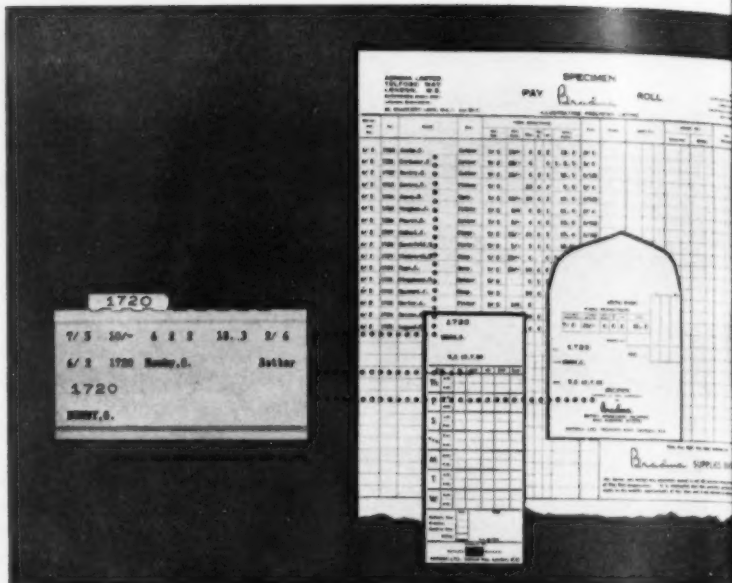
Stamping of insurance cards wastes time. Stamps representing a large sum of money have to be bought at the post office and kept in the safe. Time is saved and the danger of theft removed by the use of franking machines similar to those used for letters. The machines, which have a platen to fit an insurance card, can be bought or rented.

Payment is made in advance to the Ministry of Pensions and National Insurance. The machine is set according to the amount paid. Credit on the machine is of no use to anyone except the owner. If the records are lost or burned, the Ministry still have evidence of payment.

Coin Handling

Insertion of coins into pay-packets is greatly speeded up by the use of coin handling machines. The simplest, costing a few pounds, is a rack with columns to fit silver and copper coins, which are loaded beforehand.

Many companies use automatic



Embossed 'addressing' plates can be used for printing payroll items which are constant from week to week. This means less work for the clerk—and less chance of error

coin dispensers to speed the filling of envelopes with coin. The dispensers, which resemble those used in cinema box offices and London Underground, are charged before make-up of pay starts. Spare trays extend the machine's capacity. Coins are stacked in columns and dispensed by means of a chute. The operator holds the envelope at the mouth of the chute with one hand and presses a key with the other. There are keys representing every amount from $\frac{1}{4}$ d. to 9s. 11 $\frac{1}{2}$ d., so only one key has to be pressed.

Rounding Off the Payroll

A growing number of firms and authorities are reducing work in the wages office by paying wages and salaries to the nearest 2s. 6d., 5s., 10s., or £. Balances are carried forward and corrections made from week to week.

Here is how the system works. Suppose a man's pay is £10 13s. 6d. The company decide to round off the payroll to the nearest £. He therefore receives £11, and is debited with 6s. 6d. Next week he gets £10 13s. 6d.

minus 6s. 6d., rounded to the nearest pound—that is, £10. But he is credited with 7s. to be added to his pay for the following week.

Much controversy surrounds the system. Some employees—and employers—feel that it is wrong that a man's pay should fluctuate in this way from week to week to suit the exigencies of a company's system. Others argue that, especially with the more highly paid worker, the fluctuations can be disregarded, especially as he stands to lose nothing.

It takes longer, of course, to make up the payroll when floating amounts are carried from week to week. But where an accounting machine is used, the carry forward is virtually automatic. It requires two registers of the machine, but the time taken is only between 3 and 10 per cent of the total time taken to complete one line of the payroll.

There is, of course, a considerable saving in the handling of cash. According to the degree of rounding off adopted there are no ten-shilling

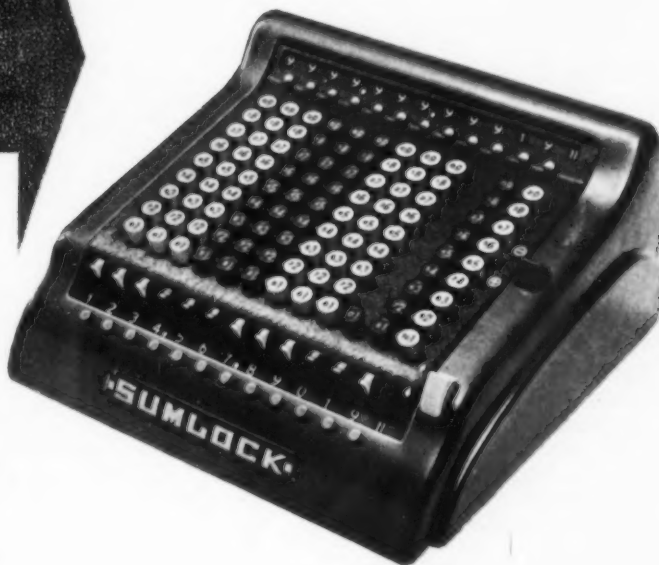
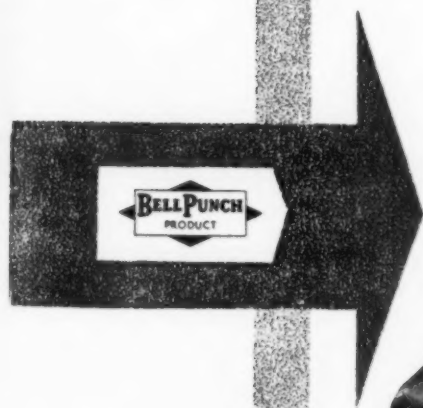
Continued on page 138

CALCULATING?
ADDING?

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TWO COMPANIES OF THE BELL PUNCH GROUP

Handwritten messages deliver themselves — as you write!

Telewriter

immediate written contact
between key locations



Transceiver

Telewriter advantages

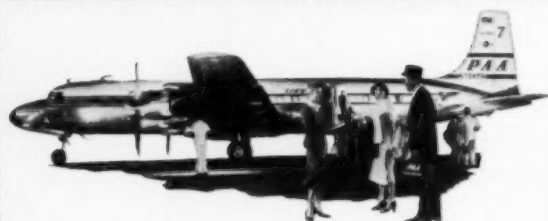
- ★ Immediate facsimile transmission to any number of points simultaneously
- ★ Suitable for linking adjacent offices or buildings miles apart
- ★ Permanent record at all points
- ★ No limit to length of messages
- ★ Faithful reproduction of drawings, diagrams, maps, shipping marks, texts, signatures, etc.
- ★ Pre-printed forms for individual requirements
- ★ Operation requires no training
- ★ British made



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Full details from

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How the PAN AMERICAN

Telewriter installation
was planned

| |
|-------------------------|
| Ticket Desk — |
| Main Arrival and |
| Departure Lounge |
| Trip Traffic Office |
| Aircraft Maintenance |
| Department |
| Ramp Maintenance Office |
| — Emergency Spares |
| Commissary |
| (In flight meals) |
| Cargo Department |
| Transport Office |
| of B.O.A.C. |
| Ministry of Transport |
| and Civil Aviation |
| Inquiry Office |
| Ministry of Transport |
| and Civil Aviation |
| Ramp Marshalling Point |
| H.M. Customs |
| Boarding Office |
| Esso Servicing |
| Control Office |



Operations and Despatch Control Room

The equipment centred at London Airport consists of one Transceiver in the Operations and Despatch Control Room linked to eleven receivers located in Pan American Internal Services Sections and other key points where speedy communication is necessary.

Telewriter has all these uses for all types of businesses

Changes and Departures
Credit Authorization
Messages
Correspondence and Records

Order Filling
Production Control
Purchasing
Stores Issuing

Restaurant Services
Time keeping and Pay Roll
Reservations
Traffic Control

Adding machine (left) is linked to the book-keeping typewriter by a solenoid attachment. The result is a flexible set-up which has brought big-firm mechanization to a very small office



This new hook-up gives them **Better Accounts at Lower Cost**

by George Hamilton

IT is gratifying at any time to find a firm, employing 250 people and with a turnover approaching £500,000 a year, whose office staff numbers only five. But when so few clerks also turn out comprehensive management accounts, deal with a weekly payroll, check prices on statements and undertake all the complicated figurework involved in submitting competitive tenders, an unusual degree of efficiency has obviously been reached.

This is the case at K. A. Hawkes Ltd., building and civil engineering contractors at Gillingham, Kent. Their considerable expansion since the war has not been reflected by an increase in office staff. Instead, intelligent buying of up-to-date equipment and a refusal to be pound flesh in the office has been the policy.

By the beginning of last year the firm were already using an electric calculator, a mechanical calculator, one photographic and one diazo copying machine, as well as strip index systems, three-in-one payroll equipment and other efficiency aids.

40 per cent better

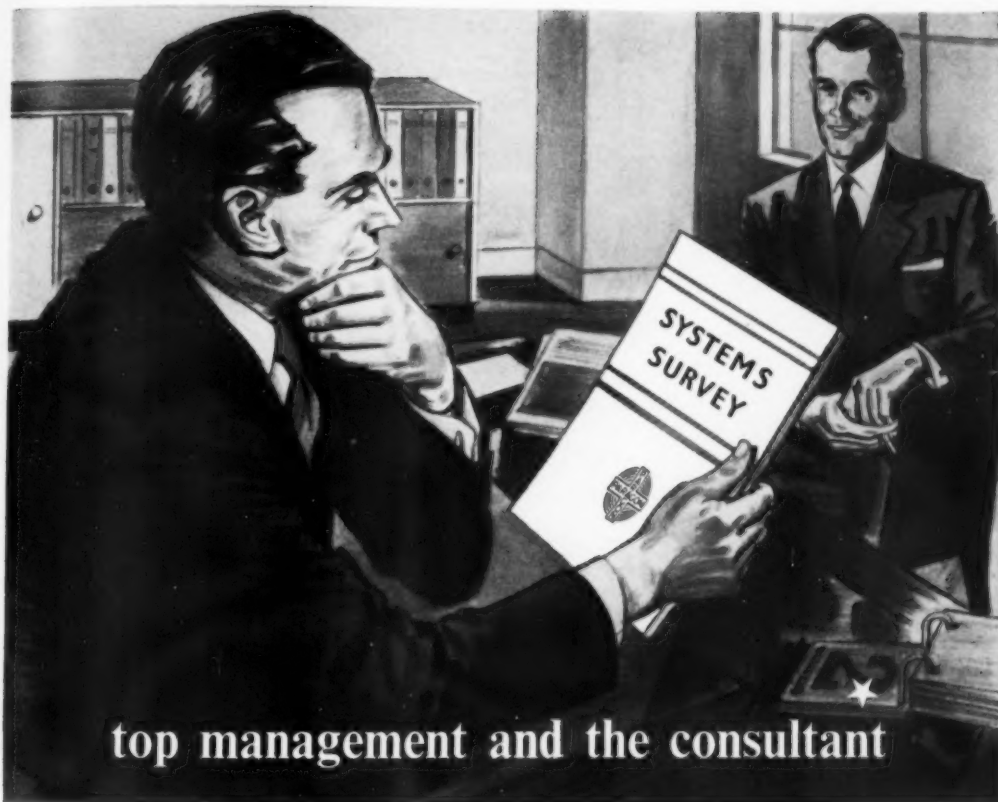
Then the first electronic hook-up between a book-keeping typewriter and an adding/listing machine—the Adjutant—was announced, shortly before the Business Efficiency Exhibition last June. Hawkes investigated, and felt that here was an item which would materially speed up their work. They were one of the first firms to have it installed, and the three-fold use they make of it has boosted their office productivity

another (estimated) 40 per cent.

The hook-up consists of a typewriter with electric carriage return, fitted with a two-channel front feed book-keeping attachment, and an electric adding/listing machine. The two are linked by a solenoid attachment which simply plugs into the adding machine.

Figures typed by the typewriter register on the adding machine either as 'add,' 'subtract,' or 'non-add' entries, according to the setting of an interchangeable form bar. The adding machine gives sub-totals where required, and stores a running balance until finally totalled.

The form bar fits into the back of the typewriter and controls the adding machine automatically. Different form bars can be used for different applications, and there are also control buttons on the typewriter



top management and the consultant

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| CREDIT | <input type="checkbox"/> |
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Seeing is controlling in modern business. Visible record equipment reduces human error to a minimum, speeds up posting and reference and provides that critical control vital to good management. But equipment alone is not the complete answer: it's the system which is designed to go with it that counts. Carter-Parratt have been supplying both for over 40 years—tailor-made to individual requirements. One of our systems advisors will be glad to study your problem—without obligation on your part, of course—and give you an opinion on whether or not a visible system would provide a solution.

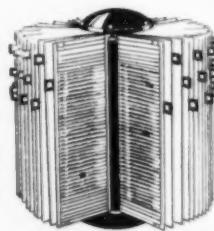
- Machine and Hand Posted
- Records
- Sales, Purchase and
- Stores Ledgers
- Stock Control
- Purchasing
- Hire Purchase
- Credit Control
- Sales Records
- Order Progress
- Production Control



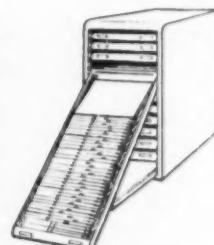
Vistem Mobile Unit



Single-pedestal Vistem Desk



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When re-ordering quote Form CL 85745

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Special cheque form has been designed to speed payments system and has been approved by the bank. The perforated slip on the right has been added so that the Adjutant's alignment system can handle the form

photocopier in the office, for distribution to everyone concerned.

The records produced by one operation in this way have never been available to the firm in this easy form before. With handwritten ledgers to record purchases, etc., it would have meant an inordinate amount of work to extract such detailed figures. With the Adjutant, the time taken by these postings and analyses is negligible and the work can easily be fitted into the office week.

Cheque-writing

Third system on the machine concerns payments. Many purchases and sub-contracts go to make up one building job, so that payments are more important as an office routine in a firm like this than receipts and credits.

For this job, the first feed channel takes suppliers' ledger cards, which must be debited with the amounts paid out. The middle channel takes a most unusual form of cheque (see illustration), specially designed for use on the machine, and agreed by most national banks. The backing sheet becomes the cash book.

The cheque form simplifies expres-

sing cash in words by the use of boxes pre-printed with 'thousand,' 'hundred,' 'tens,' etc. The rest of the layout conforms to that of the cash journal and the supplier ledger cards. Where discount details are calculated, the cheque has a blacked-out section.

The form bar is set to register the net amount to be paid as a minus balance (subtract). Then the full amount is entered (add) and the discount payable is subtracted. This clears the machine, throwing up a nil balance if no errors have been made.

The cheque form has an extra strip, attached by a perforation, to bring it up to the minimum size that the typewriter's alignment system can handle. When cheque-writing is finished, this stub is simply detached and thrown away.

General

Filing space has been reduced very considerably with the new system. Where before a considerable number of current ledgers were needed, there are now only a limited number of posting V-trays and three loose-leaf ledgers.

Cleanliness of the paperwork is another improvement. The align-

ment system of this typewriter is so exact that a ledger card can be removed from the machine, replaced in it and a line on it overtyped without this being noticeable. Consequently, all the record cards look as if they had been posted at one sitting, and are easy to read.

When the Adjutant is not in use, its linking device can be unplugged, and the two constituent machines used separately. Hawkes find the adding machine very useful for pre-listing, summarizing and other occasional jobs, but they generally keep the typewriter fully set up for book-keeping.

Apart from the specific instance of payroll work mentioned above (cut by half) it is hard to calculate exact time savings. But the managing director estimates that the new systems and equipment are saving about two whole days' work a week in the office. He comments:

"All our office machines have probably paid for themselves in a year or less. But that is not the only point to consider. Through better accounting procedures the firm now gets better and faster information and can control its operations and costs much more exactly. In an expanding business like ours, that is always money well spent."

END

Battle-drill for Export Sales Executives—3

How to Get the Best Results from Your Trip Abroad

by W. R. Mills

- ★ **Keep to your master programme**
- ★ **Build goodwill with importers' staffs**
- ★ **Compile progress reports continuously**

BOOKLETS prepared by most airlines, railway companies and shipping lines will probably tell you as much as you want to know about the art of travelling comfortably. But there are two rules which you should observe:

- 1—Always be pleasant and friendly to your fellow travellers. You may be developing a useful business contact.
- 2—Avoid discussing yourself, your company or your business until you know the identity of your companion. If not, a competitor 1,000 miles away may be usefully warned of your approach.

Don't Be Sidetracked. You have decided on the conduct and purpose of your visit; therefore you must be the master of the programme when you arrive. Don't be dictatorial—but don't be sidetracked.

Tell your contact what you wish to discuss, how long it may take, where you would like to go, whom and what you would like to see, and what assistance and advice you would like from him. If you need to see other contacts, tell him frankly that you require time for this purpose.

Then give him the opportunity to mould the programme of your visit to suit his convenience. In finalizing

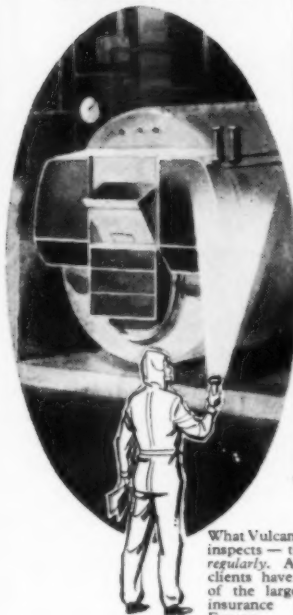
it, allow time also for report writing and official calls.

As soon as this is settled, check your departure arrangements, and your reservations for the next leg of your journey.

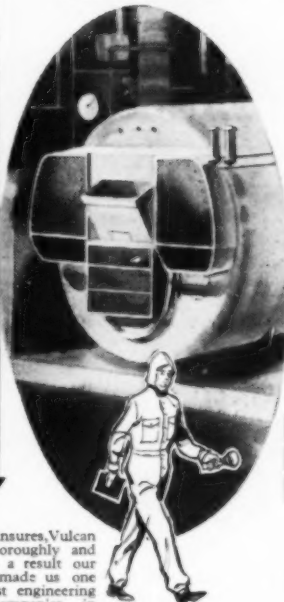
Do not delay paying an official call on your ambassador or consul, either leaving your card or signing his book. Too many export representatives do not carry out this formality. Besides being a matter of etiquette, it may well lead to your meeting the commercial attaché. At least it will show your company in the good standing it deserves.

Now begin the same process on the

BEFORE



AFTER



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— And the difference?

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Satisfy your interest—write for details or request a demonstration in your own offices without any obligation

representative on the road at home: *approach, present, close.*

But whereas he may close a sale in half an hour, it may take you days or even weeks. You are handling bigger business, and careful market investigation will be needed to substantiate your presentation.

Ensure Good Relations. Whatever you are selling your efforts will not be judged entirely by the size of the opening order. It is the soundness of the arrangements and relations which you establish with your importer, that will earn you substantial credit with your company.

During your visit, the importer will assign various members of his staff to assist you with your market investigations. It is in your hands to make this job a pleasure for them.

It is not sufficient to get on good terms with the top executives; your relations must be good with his entire staff from janitor upwards. You may even have to train their sales personnel, in which case they must acquire from you an enthusiasm for the

marketing of your products, as well as knowledge of the products themselves.

Progress Reporting. As you make headway with your investigations, keep summarizing the results to date, and keep your importer closely informed of your progress. Efficiency in this direction will impress him favourably with you and your company. Also, he may be able to suggest some useful short cuts to solutions of your problems.

Besides summarizing information for your importer, from the commencement of your market investigations you should start writing up your report. Most of the information you gather can be prepared in the form of appendices to your report. The remainder can be noted in its appropriate place in the skeleton form of the report itself. The more your report-writing can be spread out, the less arduous and more thorough it will be.

The final series of discussions between you and the importer will be

your 'presentation' and 'close' stages. If you have kept your importer closely informed of progress throughout your market investigations, then he will be more likely to appreciate and agree your proposals.

Finally, leave with the importer a written confirmation of the arrangements which you make with him. If you have given him any specific advice on, say, distribution or advertising, this should be confirmed also. This represents an *aide-memoire* rather than a check on the purport of your discussions, which will be in your report anyway.

Mail off your report before you leave the territory. As soon as you arrive at your next call, write back to your importer and any other person who has assisted you, thanking them for their help, co-operation, and hospitality.

This, then, is the form which the export representative's visit normally takes. In forthcoming articles, the various aspects of the visit will be discussed in detail. END



On the dearth of Immortals

"O, King, live for ever!" the people cry. But under present imperfect arrangements even kings never quite manage to bring this off. The people's chances aren't too bright, either. Crown and sceptre, umbrella and briefcase, all have to be laid aside in time.

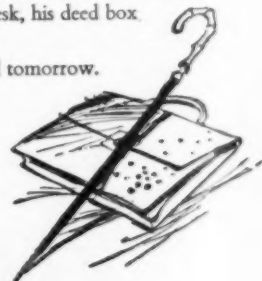
The analogy is not exact. National revenues, after all, go on. Private revenues are apt to dwindle and stop . . . Unless the breadwinner pauses in his

breadwinning to think : to think ahead to the day when, incredibly but inevitably, someone else will be going through the papers in his writing desk, his deed box

his office drawer marked "Private". To find what? With luck, a safeguard for the years to come. An assurance not only of income today, but capital tomorrow.

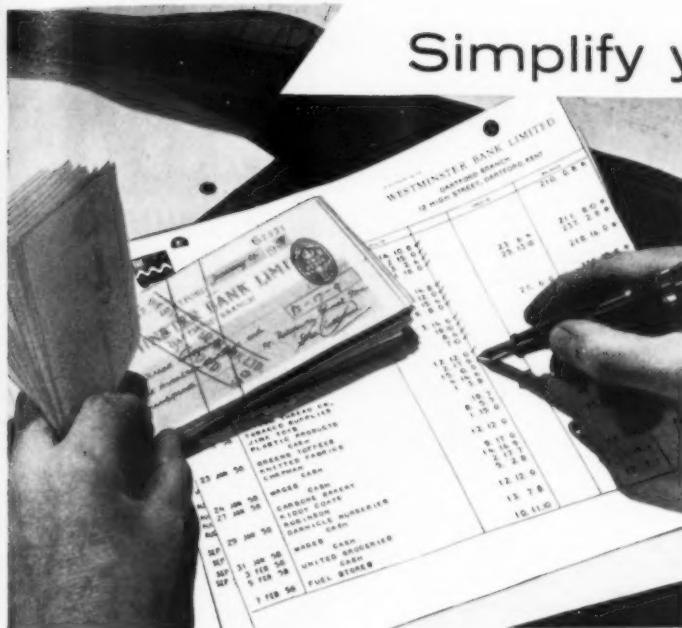
The SAFEGUARD POLICY means continuing security for your dependants when you are no longer on hand to see to it. It means material comfort for them in the future ; spiritual comfort for you in the present. And all for a small additional premium to either Endowment or Whole Life Assurance.

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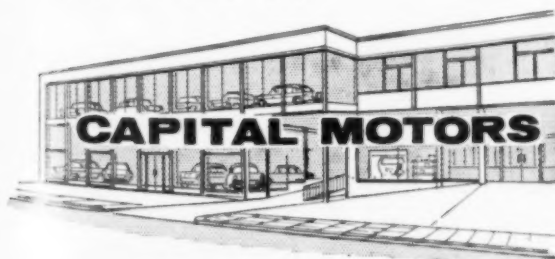
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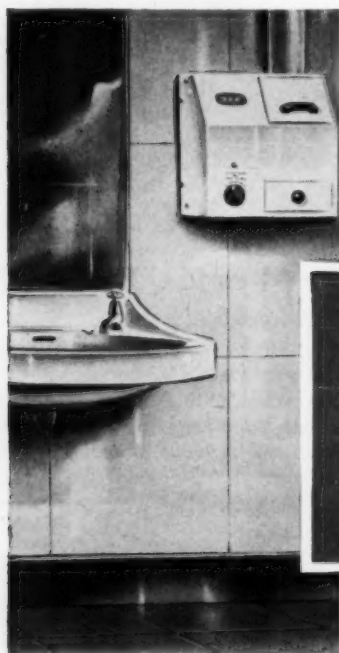
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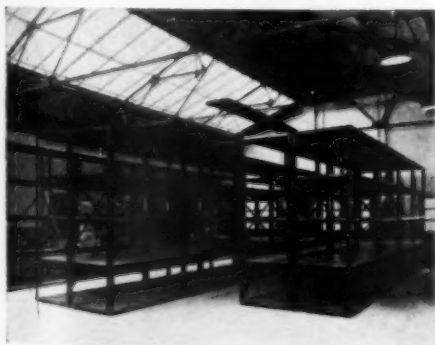
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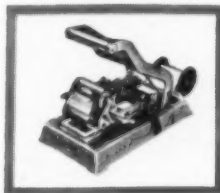
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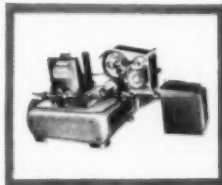
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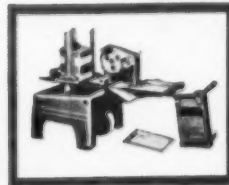
Single Print
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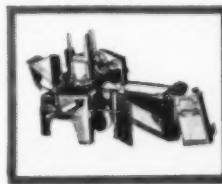
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For absolute permanence, use Verithin Coloured Lead Pencils when checking, or preparing graphs, maps and records of all kinds. The insoluble coloured lead won't run if wetted by rain or spilled water; won't smear under moist hands; won't smudge when rubbed by other papers. What is more, the tough, resilient lead can be sharpened to a needle-fine point that will hold under extra hard pressure. A Verithin Coloured Lead Pencil gives over 4,000 check marks with one sharpening—real economy, real reliability. 8d. each. 25 vivid colours.

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The 16E, typical of the Brunsviga range of adding and calculating machines, is built both for practical every day use and highly specialized calculations. No special training is necessary to operate Brunsviga machines. Our representative will be very pleased to demonstrate any Brunsviga model.



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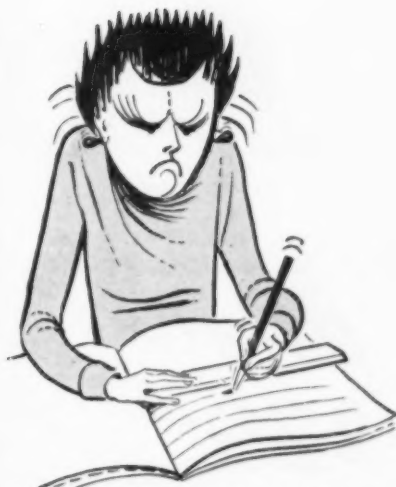
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MIRADO - 172 HB

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MADE IN ENGLAND



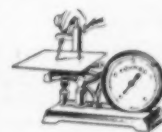
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breaks points so that you won't. The pencil presses down at normal writing angle. The dial shows that the weight needed to break the point is far above normal writing pressure.



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M7

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BUSINESS Equipment Survey

NEW AIDS TO GREATER OUTPUT AND LOWER COSTS

FOR YOUR OFFICE

Label Gumming Machines

GUM is automatically applied to labels in a wide range of sizes by a new series of machines known as *Oyster Imp.* There are three models, all of which will, without modification, accept labels up to 6in. square. Addition of simple attachments adapts the machines to deal with



Gums automatically

very small labels and those with a maximum size of 6in. wide and 12in. long.

The machines, one hand-operated, two electric, are all self-feeding. Labels are placed in a hopper at the top. They pass one by one over rollers which revolve over a reservoir of glue, and are finally ejected ready for immediate use.

No. 1 model is operated by turning a handle. No. 2 is powered by an electric motor with a fixed speed. This can, however, be changed to other fixed speeds by removing two gearwheels with a screwdriver and substituting others. The third model is similar to No. 2 but, has in addition a variable resistance by means of which speed can instantaneously be changed from very slow to the

limits imposed by the gearwheels in use at that time.

Glues of differing viscosity can be used. Two thumbscrews are turned to adapt the machine to apply the correct amount of glue in every case. They are easily dismantled for cleaning. None occupies more desk area than a standard typewriter.

Leon Davis and Co., 9 Laurence Pountney Lane, London E.C.4

Visible Card System

INVENTED in Holland and now available in this country, the *Unicard* system offers a new approach to visible filing of index cards. Basis of the system is a book-like file which holds about 240 cards. These files can be stood on end in a shelf like books, placed loose or suspended in a filing cabinet.

Cards have a writing area of 5½in. wide by 6½in. high, and are clipped diagonally at the top left-hand corner. They are filed in sets of 12, one behind the other and staggered so that the left-hand top corner and



Goes on a bookshelf

left edge are visible for index purposes. Each card is slotted at the foot, and these slots engage on ridges at the bottom of the file. This device holds them firmly in place.

Tabbed transparent dividers are placed between each set of cards, so that the location is easy. A total of about 20 sets can be filed in one book measuring 14½in. by 9in. by 1½in.

M.B.C. (Office Systems) Ltd., 31 Crouch Street, Colchester, Essex

Portable Electric Typewriter

MORE interesting, perhaps, than the novelty of the *Smith-Corona* portable electric typewriter is its price, which is substantially below that of a standard electric model. This machine, which has most of the



Most standard features

characteristics of a full-size electric typewriter, may therefore find a place in offices for which electric machines were hitherto considered too expensive.

All keys have electrified action and the machine features automatic underscore, space-bar and hyphen repeat. Its chief differences from a full-size machine are that the carriage return is non-electric, and that only

★Equipment included in this survey is selected for its news value alone. Manufacturers are invited to submit details of new and interesting products for consideration. An original photograph should accompany each item submitted.

BUSINESS Equipment Survey

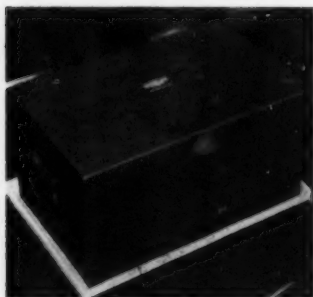
about 12 copies can be taken at a single typing as against the 25 of the standard electric. Like larger models, the portable has impression and touch adjustment. It has a two-colour ribbon and can be used for stencil typing. There is a choice of three type styles.

The electric portable is available in three pastel colours and a fourth (coral) to special order. Its carrying case is made of vinyl-covered aluminium. It is fitted with an adjustable plug which is suitable for most 2- or 3-pin points. It is similar in size to a manual portable machine, and weighs 18lb. 6oz.

*Smith-Corona (Gr. Britain) Ltd.,
52-56 Osnaurgh Street,
Regents Park, London N.W.1*

Transportable Safe

A SAFE designed for installation in the boot of a private car or the back of a lorry or truck provides a means of protecting cash in transit. The *Zenith* safe is made in two,



Takes £5,000—safely!

separately lockable parts—the strong box, and a frame work which is permanently bolted to the vehicle chassis.

Three keys are provided—two for the safe, one for the framework. *En route* to the bank, the wages clerk takes with him one safe key only, leaving the other two in the pay office. He takes the safe with him into the bank, locks the cash inside, and puts the key into a side slot through which it drops to the bottom of the safe. As he puts the safe

into its framework, it is automatically locked into position.

Arriving at the pay office, he is met by the holder of the other keys, who releases the safe by unlocking the retaining frame. (As he does this, the frame is automatically re-set ready for the next insertion of the safe.) The safe itself is then unlocked in the office, and the first key recovered from inside. The second key, incidentally, is made too large to fit into the safe's side slot, so it cannot be dropped in accidentally.

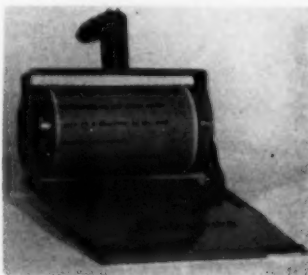
The *Zenith* is made of heavy steel, lined throughout. Its capacity is about £4,000 to £5,000 in notes. If required, an alarm system can be incorporated. This is designed so that the car's hooter will sound if attempts are made to interfere with the safe.

*Clement Garrett and Co. Ltd.,
Layburn Road Works, Sheffield 8*

Miniature Duplicators

TWO little hand-operated duplicators known as *Emgee No. 1* and *2* are modest in initial price, economical to run. They would prove useful to the small business, club or other organization which wants to produce relatively few copies of small-sized documents, and might well find a place in the larger business for doing such jobs as producing menus or memos.

No. 1 does work up to octavo size; *No. 2* takes a quarto-size stencil. Operation is very simple. The stencil is wrapped round the drum of the machine, ink is applied and the drum



Economic reproduction

rolled over the copy paper which is laid on the machine's flat tray. Up to 300 copies can be made with one inking, the manufacturers claim.

*Gutteridge, Sampson Ltd., 151
Farringdon Road, London E.C.1*

For Faster Adding-Listing

THE shuttle carriage which is a feature of the *Director 300* series of electric adding-listing machines enables the operator to list quickly and easily in two columns. There are three separate models, all for sterling, each available with or without farth-



Adds in two columns

ings. Capacity of the former is one penny short of £10 million; of the latter, one farthing short of £1 million.

Illustrated here is the *310*, a two-register machine for addition only. Listing can be done in two ways: two sterling amounts can be entered side by side and added independently; or the left-hand column can be used for reference numbers. When both adding registers are used, an automatic shuttle switch is put into action. This automatically places entries in alternate registers as the carriage moves back and forth.

The other two models have one register each. The *110* is for addition only; the *210* also does subtraction and prints minus figures in red.

Carriage stops on all machines are easily changed by the operator so that listing can be done on forms of various widths. For 'straight' adding-listing a narrow paper roll is

NO 'KNEES BEND'...



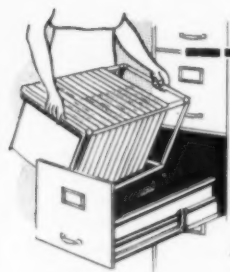
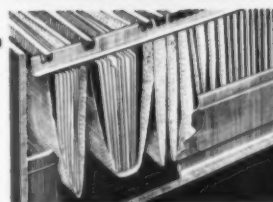
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CVS pockets automatically adjust themselves to the bulk of their contents . . . they can be expanded or contracted at will, yet the sequence cannot be broken accidentally.



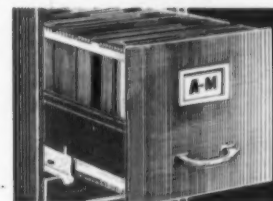
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CVS suspended filing system can be installed in any make of standard filing cabinet, quarto or foolscap. No fixing or fitting - the CVS chassis simply drops into position.



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BUSINESS Equipment Survey

clipped into place at the rear of the machine.

*Burroughs Adding Machine Ltd.,
356-366 Oxford Street, London W.1*

Office Desk

WELL suited, on account of its 'contemporary' appearance, for use in reception areas, the *PF8* office desk looks like a plain table, but has three 7½in.-deep drawers.

It is finished in walnut, oak or mahogany and has ebonized legs of



Elegant and functional

solid beech. The top, which has an area of 50in. by 26½in., is inlaid with linoleum which may be red, green or black.

Homeworthy Guaranteed Furniture Ltd., Upper Edmonton, London N.18

Long-lived Carbons

ALL the common faults which cause a typist to discard carbons while they still have life in them are overcome in *Ofrex Gold Script*, the makers claim. Fade-out does not occur in heavily used sections; the sheets do not curl or crease, and remain clean to handle throughout their useful life.

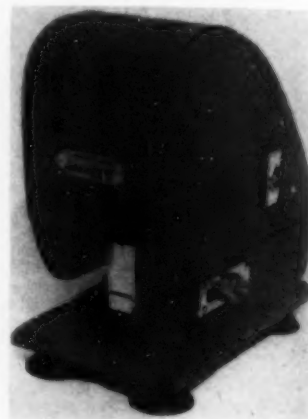
The carbons are made by a process and machinery new to this country. Secret of their toughness lies in the attractive 'gold' backing, which provides extra 'body' without additional thickness. *Gold Script* is available in quarto or foolscap size.

Ofrex Ltd., Ofrex House, Stephen Street, London W.1

Electric Stapler

AN electric stapler with automatic action, the *Lawco*, is claimed to work ten times faster than a hand- or foot-operated machine. It has the added advantage that both the operator's hands are left free for collating paper.

The machine staples from five to



Automatic action

CONTINUOUS STATIONERY the modern way

The typist—a vital link in the chain of production, marketing and distribution. Through her typewriter flow the Works Orders, Despatch Notes, Invoices, Purchase Orders and the many other forms essential to business. Far too often, however, her production suffers through unnecessary repetitive typing, and time wasted in the handling of carbon paper and loose forms.

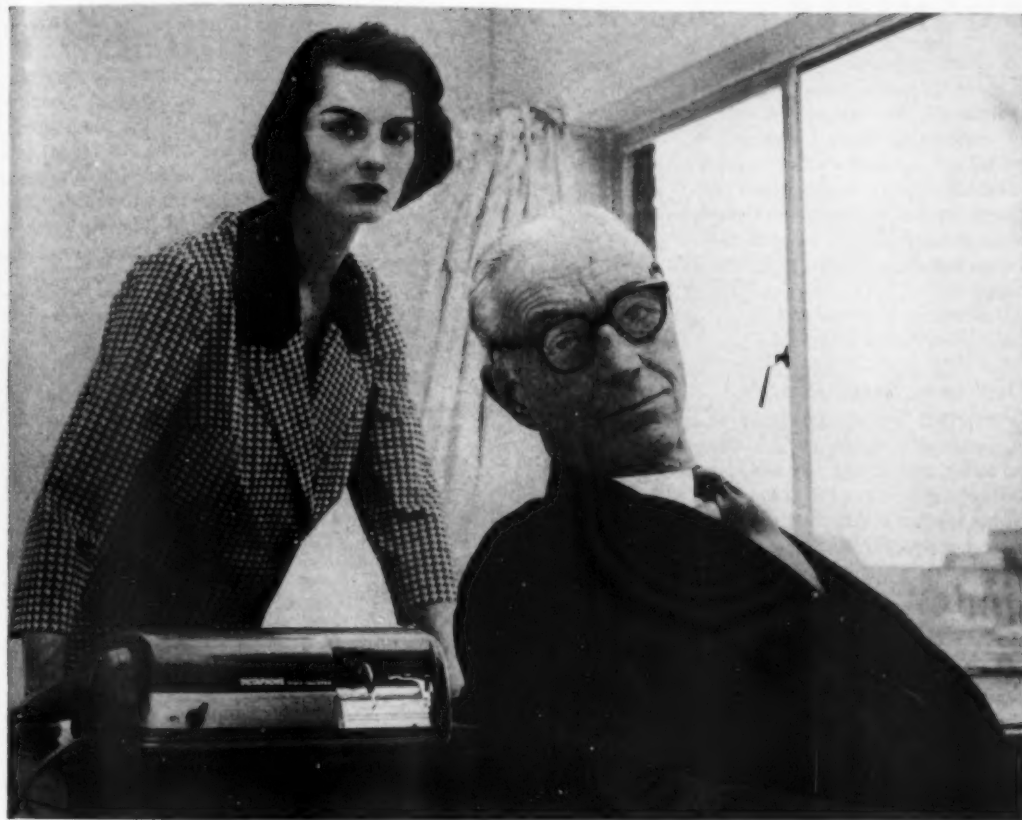
If this is your problem may we show you how the Econojet Typewriter Attachment, with Econoset Continuous Stationery, reduces unproductive operations to the barest minimum.

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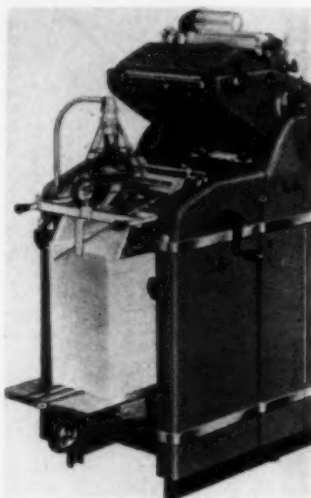
50 sheets together and is equally suitable for use with textile samples. Adjustment for varying thicknesses of material is made by turning a milled nut. Automatic action is obtained through a micro-contact, which causes the machine to insert a staple as soon as material is inserted. The *Lawco* operates on 220v. A.C. mains supply.

*Lawtons of Liverpool Ltd.,
80 Whitechapel, Liverpool 1*

Duplicator Attachment

COPIES are dried, jogged and stacked in the *Receding Stacker*, an attachment for use with the *Multi-lith 1250* small offset litho duplicator. When the run is complete, the operator merely wheels the completed work away without any further attention.

The attachment, which fastens to the rear of the machine, has the same capacity as the feed—about 5,000 sheets of paper. Before work begins, the operator raises the platform to



Stacks a whole run

maximum height by means of a handle. As sheets leave the duplicator they pass automatically on to the stacker, over which an infra-red drying lamp is fixed. As copies pile up on the stacker, the platform grad-

ually lowers itself until, when full capacity is reached, its wheels rest on the floor.

Because it obviates the need for any additional stacking table or further handling of the duplicator's completed work, the attachment will be especially useful for operators who have more than one machine to attend to.

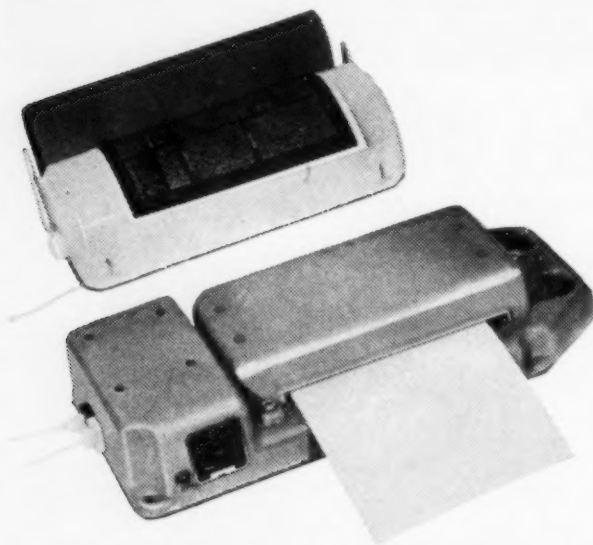
*Addressograph-Multigraph Ltd.,
Maylands Avenue, Hemel
Hempstead, Herts.*

Portable Photocopier

DESIGNED for use with *Contour* photocopiers is the new *Constat* hand-operated processing unit. Together, these two units form a portable and reasonably-priced photocopying outfit.

The *Constat*, intended for use with *Gevacopy* or *Copyrapid* paper, is available with a 9in. or 14in. feed width. It is constructed like a flat box on top of which are two hinged lids. These, when opened out, stand up at a steep angle on either side and act as paper guides.

For developing, the negative is



Mason POLYPRINT

Polyprint copies any original document in black and white—writing, typing, pencil work, ink work or colour, the latter in monotones. Maximum size of reproduction is 13in. x 8in.

Polyprint uses a photographic process, therefore copies require no checking. Negatives and prints are made from the same type of paper and one negative produces an unlimited number of prints. No darkroom is required.

Polyprint is as small as an average typewriter, is clean in operation, extremely easy to use, readily portable and copes with long runs at a speed of about four prints per minute.

The paper used is of all-British manufacture and is an entirely new product developed for the Polyprint process by the Criterion Laboratories.

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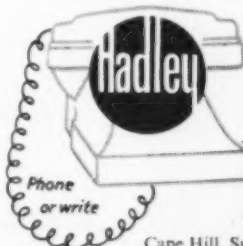
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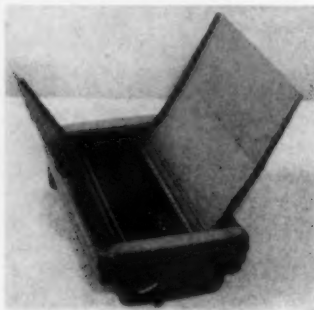
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BUSINESS Equipment Survey



Lightweight processor

placed on one guide and a sheet of positive paper on the other. Below the guides, in the body of the box, are twin rollers, beneath which is a sump filled with developer. As the handle of the unit is slowly turned, both sheets of paper are fed simultaneously via the outside edge of the rollers through the developer. They emerge between the two rollers closely pressed together, and can be peeled apart in a few seconds.

A recent modification to the Con-

toura is an automatic timer. This makes operation easier for the inexperienced. The equipment, made in three sizes, is particularly suitable for copying books. It is a flatbed model, with an inflatable translucent plastic bag instead of the usual rigid glass screen; this malleable surface can be pressed into every crevice of the book, ensuring complete contact even at the inner margins. For book copying, the inside of the unit is removed from its outer casing and inverted over the volume.

Contoura Photocopying Ltd., 56
Islington Park Street, London N.1

Label Moistener

A NEAT, low-priced gadget known as the *Danny Damp* provides an efficient method of moistening labels, envelope flaps and other gummed surfaces. Shaped like a rubber stamp, it has a sponge rubber pad, through which a suitable amount of water is evenly distributed.

The translucent plastic handle of the pad contains a reservoir of water.

Though it fits snugly enough to prevent dribbling, it is easily detached for refilling. Moisture is distributed by a gentle squeeze on the handle.

Arnehurst Sales Ltd., 136 Grand
Buildings, Trafalgar Square,
London W.C.2

Adding-listing Machine

ITS remarkably low price places the new *Adwel Minor* adding-listing machine within the reach of the smallest business. Designed for addition only, it has a keyboard capacity of £999 19s. 11½d.

Even a completely unskilled operator can use the machine with ease. Pounds, shillings and pence keys have tops of contrasting colours. Pressure on the 'repeat' key causes the machine to re-enter a constant sum as many times as required, thereby performing, in effect, small multiplications. Total and sub-total each have a distinctive key. Listing is done on a coloured paper roll so that torn-off portions can easily be identified among other papers.

Adwel Adding Machines Ltd.,
20 Pall Mall, London S.W.1



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Starts fast, never clogs, writes non-stop!
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*Pens: 27/11½d. (inc. P.T.) per dozen. Refills: 18/10½d. (inc. P.T.) per dozen. Further quantity discounts.
Sold in packs of 12 of any one ink-colour. Minimum trial order: 1 pack.*

Why do conventional ball pens sometimes start slowly and skip letters and words? Because the tip corrodes, causing the ink to clog. But the new EPIC has a unique silvered tip which cannot corrode. So with EPIC you get *instant* smooth ink flow . . . and *continuous* smooth writing!

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Non-fade ink withstands Ultra-Violet fading tests better than all other ball pens • Quick-drying ink (blue, red, green or black) — no smear or smudge • Simple 2-button retraction mechanism—no cap to remove or lose • Ink colour identified by matching retractor button • Each refill individually wrapped and sealed to reach you factory-perfect.

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THIS MAN

... is worth £60,000

His employers will tell you that Bob West is worth every penny of that £60,000. Why? Because, single handed he put out a fire that, if allowed to spread, could have destroyed the whole plant.

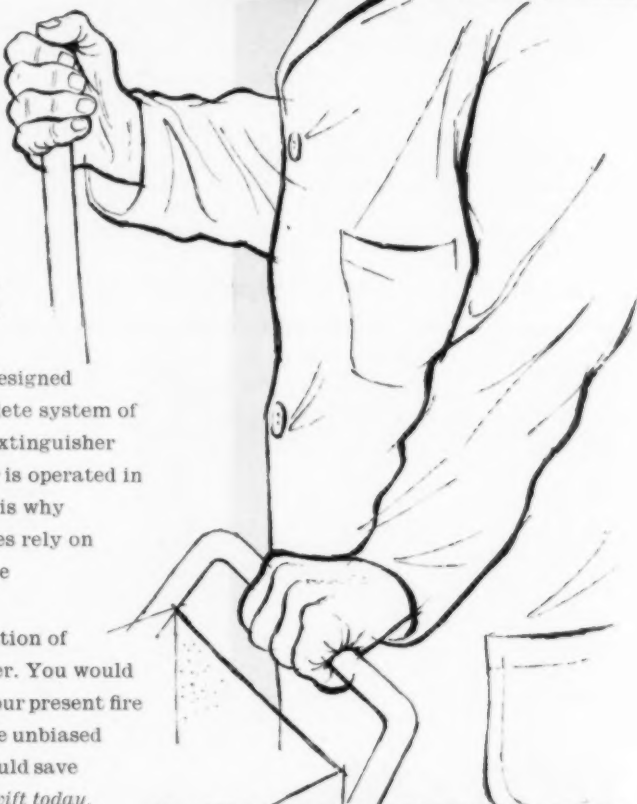
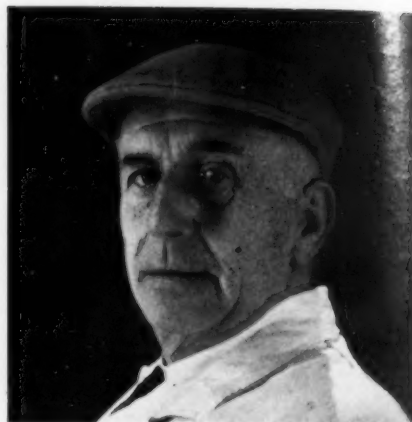
Bob discovered the fire ... extinguished it instantaneously ... and was back at his job in 5 minutes. Modestly, he gives most of the credit to Nu-Swift — and Bob is right.

Every Nu-Swift extinguisher is designed to fulfil a specific function in a complete system of fire protection. There is a Nu-Swift extinguisher for every risk and every extinguisher is operated in the upright commonsense way. That is why industry and commerce in 70 countries rely on the easy-to-handle, certain-to-operate Nu-Swift extinguishers.

Delay or inefficiency in the operation of your extinguishers could spell disaster. You would be wise to request Nu-Swift to check your present fire fighting equipment. The report will be unbiased ... it won't cost you a penny ... and could save you a fortune. *Get in touch with Nu-Swift today.*

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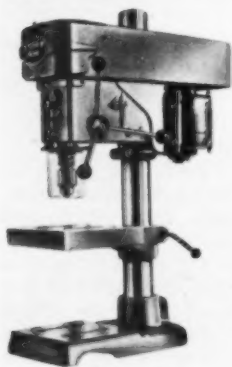
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pulleys and motor, as well as the spindle. The spindle is six-splined, driven through a broached bronze sleeve. There are four speeds. The transparent chuck guard is pivoted for easy removal of drills. The pulley guard also swings away for easy belt-changing.

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*Startrite Engineering Company,
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Safety Monorail

SHOCKS are practically impossible with a new conductor rail designed to replace those normally used for electrical overhead material handling systems.

The new rail— $\frac{3}{4}$ in. wide by $\frac{3}{8}$ in. deep by $\frac{1}{8}$ in. thick—is of corrosion-resistant electro-galvanized steel enclosed in an extruded p.v.c. sleeve.

AY, 1958

The shielding is fool-proof—even a finger cannot make contact with the conductor—but the functioning of the sliding contact shoe is not impaired.

Accessories include safety covers for splices in the conductor bar, neoprene caps to shield rail ends, and insulating pieces for isolating parts of the system.

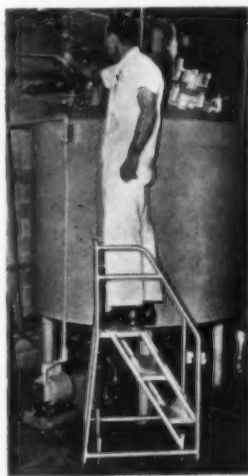
The new rail means that many systems at present working on low voltages for safety, can switch over to mains operation, which is more economical.

*British MonoRail Ltd., Wren
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Safety Steps

MOBILITY and safety are achieved in a new range of tubular steps. There are 40 models to suit heights between six and 15 ft.

They are designed to be easily moved through narrow gangways. The weight of a person automatically lowers the rubber feet to the ground in the case of the smaller models. This is done by a lever on the larger models. The larger models can also



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be supplied with an elevating shelf, with a capacity of 200 lb.

*Access Equipment Ltd., Maylands
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One-hand Jig Saw

LIGHTER and more powerful than the model it replaces, a new electric jig-saw is designed for one-hand operation. It is available in all voltages between 50 and 250. Weight is just under 5 lb.

Thicknesses that can be cut are:



Cuts steel, wood, plastics

mild steel, $\frac{3}{8}$ in.; wood, formica, fibre glass, 2 in. Because of the improved vision the operator can easily follow any given line.

Various blades are available to suit the grade of material to be cut. Operating speed is 2,900 strokes per minute, and this is maintained even under heavy load.

*Trend Industrial Equipment Ltd.,
5 The Ridgeway, Stanmore, Middx.*

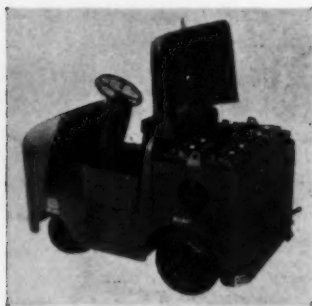
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FOUR-WHEEL independent suspension and regenerative braking are the outstanding features of the *Toer* electric tractor.

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BUSINESS Equipment Survey



Exceptionally smooth running

ceptionally smooth control, and saves wear on the mechanical brake which is used mainly for parking.

Lansing Bagnall Ltd., Kingsclere Road, Basingstoke, Hants.

New Fork Truck

SPECIAL features of the NR 30 battery-powered forklift truck make it more sturdy and reliable.

Two self-aligning tilt cylinders relieve the mast connecting rods of all strain set up by road shocks. The mast is readily detachable from the chassis and a new arrangement ensures that a load cannot accidentally be lowered too quickly.

Special design of the control gear means that inner parts of the truck



Gives controlled lifting

are more accessible. The life of hydraulic seals has been considerably increased by hard-chroming the cylinders.

Ransomes Sims and Jefferies Ltd., Orwell Works, Ipswich

Miniature Soldering Iron

TRANSISTORIZED circuits, instruments and anything else which requires precise soldering with a minimum of excess heat, are safe with a new soldering iron which weighs only 1 oz. It consists basically of an insulated element mounted inside a steel shaft about 3.5mm. in diameter.

The exact soldering temperature is maintained at the bit, reducing the risk of damage to delicate circuits. The moulded, non-slip handle fits snugly into the hand. An air gap protects it from excessive heat.

The element is sealed and mounted on a shock absorber. Replacement of the element assembly takes about 30 seconds. Bits are nickel-plated;



Weights only 1oz.

renewal is particularly easy because slots prevent jamming on the shaft due to corrosion. Models are available for all mains and low voltages.

A.N.T.E.X. Ltd., 3 Tower Hill, London E.C.3

Durable Fencing

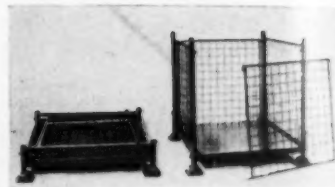
CANADIAN red cedar—virtually rot-proof—is used to make a new range of long-lasting fencing. It can be nailed without splitting and needs no protective treatment.

Used in conjunction with the makers' concrete framing, it constitutes a practically permanent close-board fence.

Permafence Ltd., 225-7 High Street, Acton, London W.3

Collapsible Pallet

SPACE, weight and initial cost are saved by a new collapsible pallet. It can be erected or folded in a few



Stacks flat after use

seconds, and is light enough to be handled with ease by women.

For filling or emptying, two sides fold down while the other two remain upright. In the folded position, there is a minimum of wasted space—the sides fold quite flat while the stub corner posts enable many to be stacked on each other for returning empty.

Barron and Shepherd, 16 Blackfriars Lane, London E.C.4

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ATTRACTION and adaptable display boards are made from sheet iron, coated with ferro-enamel, and bonded to wood or plywood. Known as *Ferro* chalkboard, the material is in a pleasant matt green.

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BUSINESS



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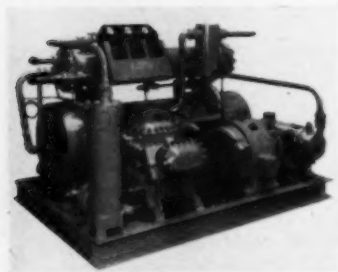
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An air space 2in. wide divided by *Carcotherm* has an insulation value equal to 1in. cork slab. Used on battens to make an airspace around brickwork, it reduces the heat loss by two-thirds.

*Carr and Co. (Paper) Ltd.,
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COMPACTNESS is the main advantage of a new range of water-chilling units. Each is a 'packaged'



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equipment, designed to reduce installation time to a minimum. The smallest in the range has a capacity of 10h.p., and is only 6ft. long by 4ft. wide by 3ft. 9in. high.

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*Lightfoot Refrigeration Co. Ltd.,
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Stencil Spray

MUCH of the mess normally associated with ordinary stencilling methods is avoided with *Spray*, a new aerosol ink dispenser. It is quick-drying; water-proof; suitable for porous or non-porous surfaces; always ready for use apart from a shake of the can.

Cleaning of brushes and preparation of stencil ink are eliminated, and no extra equipment is required.

*J. and H. Rosenheim and Co.,
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NICKEL iron alkaline batteries can be conveniently tested for state of charge by means of a new instrument, which consists of a sturdy steel fork with voltmeter and resistance.

The prongs of the fork are placed across the cell and the voltage read off. This, compared with a chart supplied with the tester, tells the state of the cell. Thus undercharging and overcharging are avoided.

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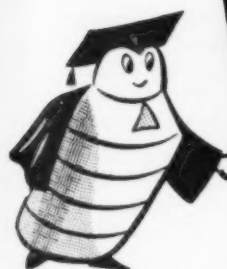
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Shortcuts for the Payroll

Starts on page 102

notes, or no silver or no copper to be collected from the bank, counted out, and placed in pay envelopes. One or two people can collect from the bank all the cash required and carry it in their pockets without using briefcases. This considerably reduces the risk of robbery.

The local inspector of taxes is generally prepared to regard any 'float' as an advance to the employee, and to ignore it for taxation purposes.

When the Port of Bristol Authority decided during the last war to pay their employees to the nearest 10s. they sold the scheme to the employees by advancing a 10s. float initially to each man so that he could never complain that he was out of pocket. He is, in fact, always in pocket by an amount varying from 1d. to 9s. 11d. Nevertheless, the chief accountant finds it necessary from time to time to explain the scheme to the men.

Many other firms round off the payroll to some figure between 2s. 6d. and £1. All claim savings in time

between 5 and 20 per cent. Where wages are distributed by a clerk carrying a pay tray round each department they find that the absence of coins enables her to carry the payslips for two or more departments instead of one.

Many Complaints

One employer who experimented with rounding off the payroll abandoned it after one week. Employees complained that they did not have change for union dues, the canteen could not change the large numbers of half-crowns and notes, and local shopkeepers complained of a shortage of small silver and copper for several days. This was an extreme case—the company are practically the only large employer of labour in a small town—but it illustrates some of the points to be considered.

Another employer who rounded off the payroll had a similar experience at first. But they persevered, and in a few weeks employees had learned to accommodate themselves to the new situation by saving small change for the end of the week.

One Kent firm wanted to streamline their payroll procedure. They rejected the idea of rounding off on the ground that it was inconsiderate to employees. Instead they adopted a particularly practical approach.

Pay envelopes for 1,200 employees are filled by four people in two hours, using two automatic coin dispensing machines. The payroll is not checked for the amount of the different coins required. Time is saved by deciding on an average amount in the light of experience. A small float covers the risk of shortage of any particular coin. Thus the bank can make up a standard amount of coin every week.

At each automatic dispensing machine there are two clerks. One counts out the notes and 'fills the coin'; the other checks the notes for accuracy and puts them in the envelopes. There is no checking of coin. Instead, employees are encouraged to refer any shortages to the wages department. These are always made good. Over a period of years this practice has never been abused.

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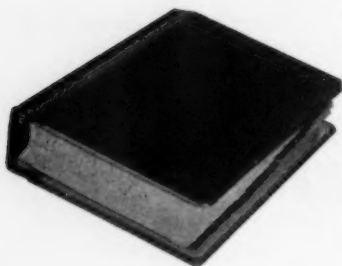
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IS MANAGEMENT A

A new British study analyses the ways in which executives climb the promotion ladder

THE answer, if one is to believe a new book studying managers' careers*, is decidedly No. Neither the kind of people who make up the management team, nor the nature of their work, and the way they get on, suggests that they belong to a profession. And why should they aspire to professional status? Business management is a worthy calling with its own distinct features.

R. V. Clements, formerly of Manchester University Department of Economic and Social Studies, has interviewed almost all of the managers in 28 firms in Lancashire and North-east Cheshire, firms of a wide variety of size and type of industry. He reports the results of 646 interviews and completed questionnaires about the careers and backgrounds of those who, earning £800 a year or more and exercising some administrative responsibility or performing a responsible service function, could be classified as members of the management team.

It was found possible to divide the 646 managers into six classes according to the manner in which they entered industry: the crown princes, following in their fathers' footsteps; ex-managerial trainees, pre-qualified specialists, who were trained in a profession or technology before entering industry; the special entrants, a heterogeneous group who did not start at the bottom and whose entry was generally by private and individual negotiation; those who rose from the bottom and who left school after the age of 15; and those who rose from the bottom and left school at or before 15.

The following table shows the distribution of managers according to type of entry into industry:

| | |
|-----------------------------------|-----|
| Crown princes | 28 |
| Managerial trainees | 68 |
| Pre-qualified specialists | 130 |
| Special entrants | 79 |
| From bottom, left school after 15 | 114 |
| From bottom, left school early | 227 |

Total 646

One of the first things to note about this table is that there were 28 crown princes in 28 firms. This doesn't mean that there was one in each and that therefore in no case could a non-owning-family executive rise to top position. But it does suggest that quite a lot of top positions had reservation tickets on them.

Trainees' Success

The 68 managerial trainees came predominantly from the more famous public schools and from Oxford and Cambridge. And these people were on the whole more successful in getting into top management than were the other entrants, apart from the crown princes. Moreover, they tended to be particularly strong on the commercial side of the business, and relatively few had any substantial experience of production management.

The 130 pre-qualified specialists—engineers, scientists, accountants and so forth—were predominantly though not entirely from the grammar schools and the provincial universities. While they have not so frequently reached top management status as the other two groups, the discipline of their early professional or technical training has made them rather more inspired and more satisfied careerists than most. They are

*Managers: A Study of their Careers in Industry by R. V. Clements. (Allen and Unwin) 20s. net, 21s. post paid.

PROFESSION ?

ed out knowing what they wanted to do, and they have always had their special training as a background interest.

The 79 special entrants were people whose social background was good, though not top class. But they did not have extensive schooling, so any training provided by the firm was very important to them, and they also made extensive use of part-time study facilities.

The 114 men who started at the bottom, after grammar or technical schooling beyond the fifteenth year, were mainly from lower middle-class and working-class homes, whose interest in study had been sufficiently aroused by their schooling, and their own mental ability, to make them continue part-time training for several years after entering industry.

The 227 men who started at the bottom, after leaving school early, came largely from working-class homes but were sufficiently alert and interested in study to spend several years in part-time training after leaving full-time school.

These men who came up from the bottom are now mostly in the lower managerial positions. And many are very conscious of their lack of a good educational start — particularly of their lack of ability to express themselves clearly in the presence of better-educated superiors. Most of them got promotion only after long years of experience with the same firm, and for many the big chance came during the war, when younger better-educated men were away.

Mr. Clements' study has confirmed the earlier evidence* that managers

Journal of British Industry by G. Copeman
1955.
V. 1, 1958



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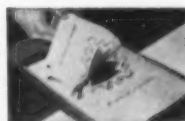


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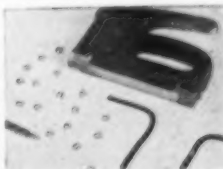


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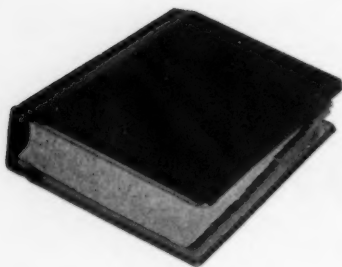
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PROFESSION ?

ed out knowing what they wanted to do, and they have always had their special training as a background interest.

The 79 special entrants were people whose social background was good, though not top class. But they did not have extensive schooling, so any training provided by the firm was very important to them, and they also made extensive use of part-time study facilities.

The 114 men who started at the bottom, after grammar or technical schooling beyond the fifteenth year, were mainly from lower middle-class and working-class homes, whose interest in study had been sufficiently aroused by their schooling, and their own mental ability, to make them continue part-time training for several years after entering industry.

The 227 men who started at the bottom, after leaving school early, came largely from working-class homes but were sufficiently alert and interested in study to spend several years in part-time training after leaving full-time school.

These men who came up from the bottom are now mostly in the lower managerial positions. And many are very conscious of their lack of a good educational start — particularly of their lack of ability to express themselves clearly in the presence of better-educated superiors. Most of them got promotion only after long years of experience with the same firm, and for many the big chance came during the war, when younger and better-educated men were away.

Mr. Clements' study has confirmed the earlier evidence* that managers

*Leaders of British Industry by G. Copeman (Gee), 1955.

MAY, 1958



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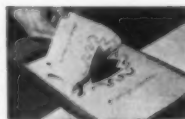


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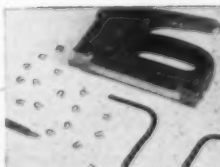


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in industry do not change their employers very often. The average number of moves in their entire careers by the crown princes and ex-managerial trainees was about one move for every two men. The pre-qualified specialists moved more frequently, with an average of 1.77 moves per career. But of course they had professional and/or technical qualifications, on paper, which made movement easier. Their qualifications were clearly saleable forms of knowledge that could be applied in a wide range of firms.

The remaining managers, the special entrants and those who came up from the bottom, averaged from 1.69 to 2.10 moves per career, but most of these moves were in the early years before settling down. The vast majority of managers in these categories settled down fairly early in life to a long career with the one employer, and their 'qualifications' became a matter of experience with the firm and knowledge of its business—not a readily saleable commodity on the outside market. Important though this knowledge is, one could hardly call it 'professional' knowledge.

Lack of Mobility

In comparing the relative lack of mobility of industrial managers with practice in the civil and military services and the universities, Mr. Clements naturally expresses some concern at the former's lack of mobility. He is probably right to do so. Square pegs in round holes are an important cause of inefficiency, and anything, like a non-transferable pension, which reduces mobility may be bad for industry.

Nevertheless, one should look on a business career very differently from one in, say, the Civil Service. A business manager should generally be prepared to settle down to one firm and *make something of it*. The firm rarely has a permanently fixed policy as to exactly what it will make and how it will sell the products. If it did, it would almost certainly go out of business, for market needs keep changing. The business manager

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ger makes or mars his own career, according to whether the things he and his colleagues sell are a success. If the firm grows, he rises with it; if the firm shrinks, his chances fade.

Government departments also expand or contract, but promotion for the civil servant is more often a matter of being qualified and capable to step into someone else's shoes, than of proving conspicuous ability to serve customers. This is all a matter of degree. But paper qualifications and mobility count for far more in the civil service and the professions than in business.

Know-how Counts

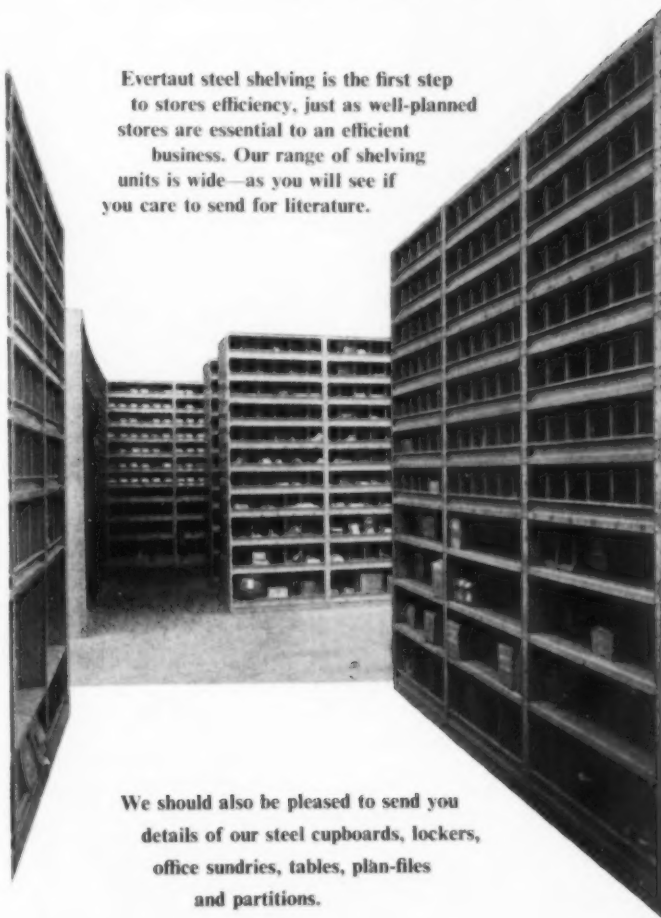
On two counts, therefore, management can hardly be regarded as a profession. First, the variety of people in it is too great for any systematic set of standards. And second, promotion up the management ladder depends so much on knowledge of a specific job and success in it, and very much less on paper qualifications.

Mr. Clements goes further. He points out that "specialization, whether trained early to a high pitch or gained by long experience, is the hallmark of most careers, and those of top managers are rarely exceptions to this rule. . . . Except some of the crown princes, they have earned promotion by success in junior and specialized positions, and despite the importance of the co-ordinating function of top management, the careers of a few seem to have been such as to promote width of experience or adaptability."

Later, he adds: "It looks as if managers constitute many non-competing groups. Industrial management appears to be a host of diverse jobs, entailing diverse techniques and experience, different standards and types of education, and different attitudes and sets of principles." Mr. Clements recognizes that the knowledge of what to make and sell is at least as important or more so than the specific techniques for organizing these activities. Moreover, the requirements of these skills vary so much from firm to firm, depending

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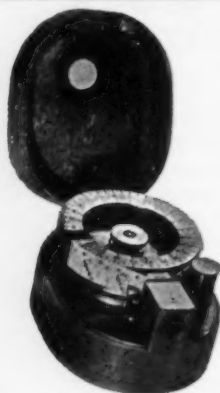
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on the nature of the work, that it may even be doubted whether management is a recognized body of professional knowledge.

These doubts, however, should be somewhat cleared by recent research into the basic types of firms and their needs of management data. The opening article of this issue of *BUSINESS* (page 66) discusses this subject in some detail. It does seem that we are approaching a stage where firms can be classified into a relatively small number of types. Management may not yet be one homogeneous profession, but it may soon prove to be a broad professional grouping, with about six more precise sub-groupings.

END

Are Your Costs and Prices Realistic?

Does your thinking take account of changing values? So many things have gone up in price—labour, machinery, supplies, professional services and finished goods. This table, based on the retail price index, gives you a rough set of conversion factors for bringing your values up-to-date. For example, if you spent £100 on a machine in 1931, for which year the conversion factor is 2.85, then you could hardly be surprised if a similar machine now costs £285. It may actually cost more or less, but you would expect values generally to be around 2.8 times the 1931 level. This table will be brought up-to-date every quarter, but published monthly for handy reference.

| Year | Conversion Factor | Year | Conversion Factor |
|------|-------------------|------|-------------------|
| 1913 | 4.19 | 1935 | 2.91 |
| 1919 | 1.93 | 1936 | 2.85 |
| 1920 | 1.69 | 1937 | 2.71 |
| 1921 | 1.86 | 1938 | 2.68 |
| 1922 | 2.29 | 1939 | 2.60 |
| 1923 | 2.39 | 1946 | 1.74 |
| 1924 | 2.39 | 1947 | 1.65 |
| 1925 | 2.39 | 1948 | 1.53 |
| 1926 | 2.44 | 1949 | 1.49 |
| 1927 | 2.50 | 1950 | 1.45 |
| 1928 | 2.53 | 1951 | 1.37 |
| 1929 | 2.55 | 1952 | 1.21 |
| 1930 | 2.65 | 1953 | 1.16 |
| 1931 | 2.85 | 1954 | 1.10 |
| 1932 | 2.91 | 1955 | 1.10 |
| 1933 | 2.98 | 1956 | 1.07 |
| 1934 | 2.98 | 1957 | 1.07 |

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How to Tell the True Profits Story

Starts on Page 79

of the imports and exports which pass through the Port of London are at some stage transported. This is how the cost of a 250-ton steel barge has risen:

| Year | Cost |
|---------|--------|
| 1937 .. | £1,000 |
| 1947 .. | £3,800 |
| 1957 .. | £6,800 |

Therefore a small company who bought 50 barges in 1937 would have needed £55,000 capital. But to replace these barges when they wear out, provided there is no further inflation, will require £340,000.

Taking into consideration that a steel barge starts from coal and iron ore in the ground, it is probably true that salaries and wages represent nine-tenths of its cost, and the increases in cost are primarily due to increases in salaries and wages without corresponding increases in the rate of output per man-year.

Example 2. The following figures were prepared by a senior partner of a firm of city accountants some 18 months ago. A company with 20 barges (average age 20 years, estimated life 40 years) would have to earn £1,500 per annum purely to cover the charge of 5 per cent on initial cost and to cover replacement of the craft at the original purchase price when worn out. Taking the replacement cost at the time of the calculation of £5,500 per barge, the necessary sum to be earned per annum (a) to cover 5 per cent on the original cost, (b) to set aside the necessary money so that the craft can be replaced when worn out after approximately 40 years' life, and (c) to meet the taxation which would be applicable to the earnings as the Government allowed wear and tear on the original cost basis, would be £10,590 per annum. Of this, £5,015 per annum would be paid to the Government as tax.

The enormously-increased charge which must be made for the use of

the fleet of barges without improving the owners' position or capacity for doing trade thus clearly increases the cost of goods transported.

It must be conceded that since the date of the calculations the application of investment allowance has appreciably alleviated the taxation position for craft. But investment allowance has already been withdrawn once, and industry does not know whether it will be withdrawn again. Moreover, the example applies to many types of plant and equipment, most of which do not receive investment allowance.

In their economic surveys, the Treasury use the figure referred to as 'gross profit.' Thus it seems that here also there is need for instruction.

Action to be Taken

Who is responsible for misleading people as to the true profits of industry? What ought to be done to put the matter right?

The directors of companies are responsible for presenting accounts to their shareholders, and therefore have a prime responsibility; but many directors leave the matter to the auditors who prepare the accounts. By and large, auditors have not taken sufficient notice of the effect of the 1948 Companies Act which required that depreciation and directors' emoluments should be separated; or of the swingeing burden of taxation at today's rates and the effect of inflation in relation to replacement costs. Also, they have given inadequate attention to proper nomenclature of revenue accounts to ensure that other than financially-trained people understand the real meaning of them.

To put the matter right, businessmen must act in collaboration with the Institute of Chartered Accountants and the Chancellor of the Ex-

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chequer. After discussion, it should be possible to devise a 'model' form for the presentation of companies' accounts.

The financial Press might be encouraged to modify some of its headlines and methods of reporting. With great frequency we read in the reporting of companies' affairs, "record turnover," suggesting excellent company results. The company which manufactured the 50 barges mentioned in Example 1 would have had a turnover in 1937 of £55,000, in 1947 of £190,000, and in 1957 of £340,000—yet in every case they would have made only 50 barges. Any company which has not got a 'record turnover' under the conditions of inflation which have applied is probably in a decline.

Good Example

There are some enlightened companies who have ensured that their revenue accounts are not misleading. Guest, Keen and Nettlefolds are an example. Their revenue account starts with 'trading surplus' (I would prefer 'trading account balance') and the figure quoted is after charging depreciation (including a stated sum to cover increased plant - replacement costs). The enormous sum deducted for taxation is stated and then the 'profit.' This is the true profit, and it is the only place in the account where the word 'profit' is used. If all accountants and directors adopted this method and the financial Press co-operated in reporting, it would be an immediate step forward.

But the proportion of companies giving such information to employees is very small. Today, it is of greater importance than ever before that real efforts should be made to ensure the widest possible understanding of the true profitability of industry. It will be an uphill task for management, but in the long run will be worth the perseverance and effort required.

Let us hope that the Institute of Directors will give a vigorous lead and will secure the full support of the Institute of Chartered Accountants and the Stock Exchange. **END**

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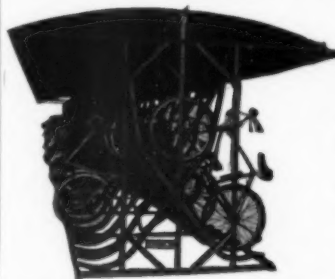
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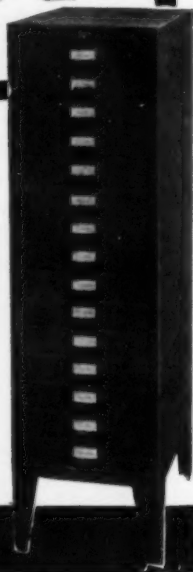
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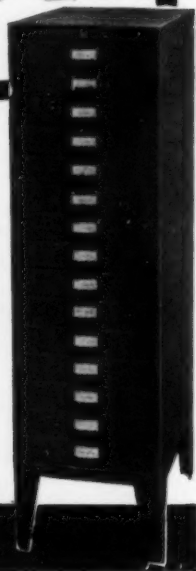
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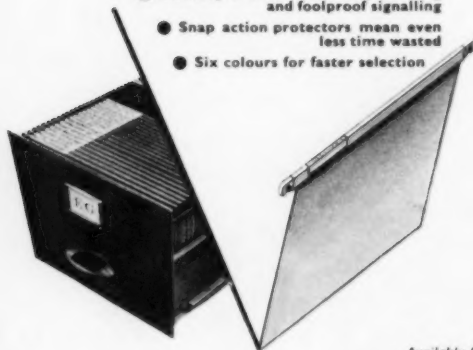
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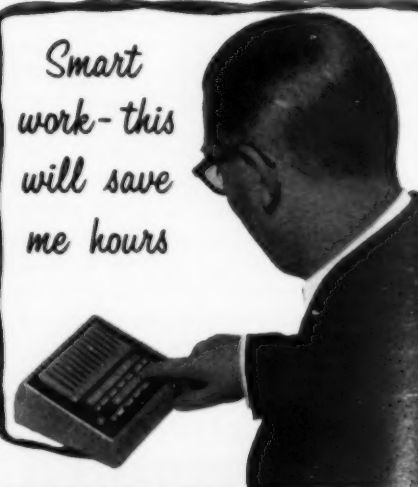
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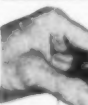


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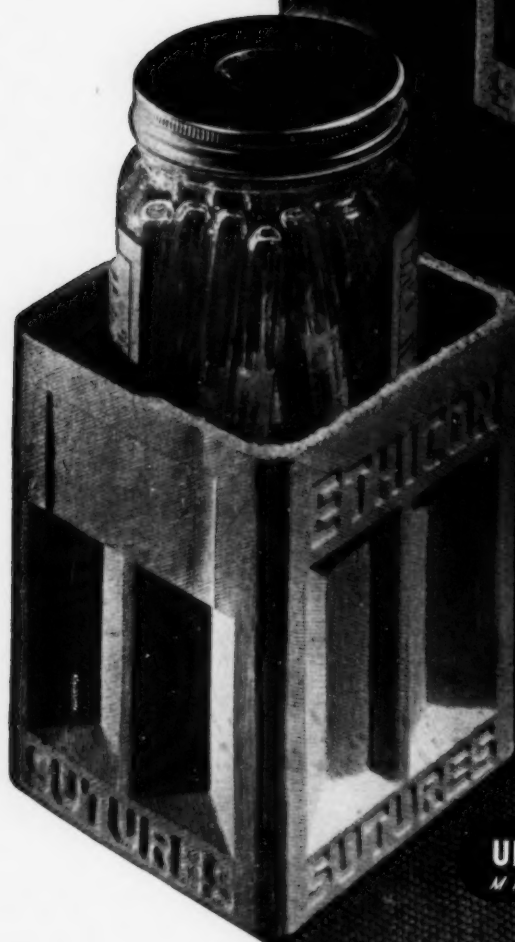
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